Tokin Series

Fanless Industrial Panel PC with Intel® Celeron® 827E

User's Manual

Version 1.0

P/N: 4010608300100P

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Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

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Declaration of Conformity

CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

> Warning
> This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC Class A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and

(2)This device must accept any interference received, including interference that may cause undesired operation.

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment

generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

RoHS

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

SVHC / REACH

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

Important Safety Instructions

Read these safety instructions carefully

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.

5. Keep this equipment away from humidity.
6. The openings on the enclosure are for air convection and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
7. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
8. Never pour any liquid into opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped or damaged.
    f. The equipment has obvious signs of breakage.
11. Keep this User's Manual for later reference.

About This Manual

This User's Manual is intended for experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this User's Manual, please consult your vendor before further handling.

Warning

The Industrial PC and its components contain very delicately Integrated Circuits (IC). To protect the Industrial PC and its components against damage caused by static electricity, you should always follow the precautions below when handling it:

1. Disconnect your Industrial PC from the power source when you want to work on the inside.
2. Use a grounded wrist strap when handling computer components.
3. Place components on a grounded antistatic pad or on the bag that came with the Industrial PC, whenever components are separated from the system.

Replacing the Lithium Battery

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trash can. It must be disposed of in accordance with local regulations concerning special waste.

Technical Support

If you have any technical difficulties, please consult the user's manual first at: ftp://ftp.arbor.com.tw/pub/manual
Please do not hesitate to call or e-mail our customer service when you still cannot find out the answer.

http://www.arbor.com.tw
E-mail:info@arbor.com.tw

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

Chapter 1

General Information

1.1. Introduction

The Tokin industrial panel PC is a work of the state-of-the-art HMI. The IPPC comes with 8-, 12-, and 15-inch models loaded with Intel® Celeron® 827E processor and Intel® chipset to deliver high performance for industrial computing. Working with particular software, the panel PC can deliver some particular industrial application such as kiosk or factory automation.

The IPPC is highly protected against extreme shock and vibration. It dissipates heat by fanless thermal conduction and runs on very low power. This makes the system highly reliable and inexpensive to maintain and therefore the best choise for industial automation.

1.2. Packing List

Carefully inspect the contents in the package, which should contain the items listed hereunder. If any item is missing or appears damaged, contact your local dealer or distributor.

T6083 T6123 T6153

1 x Tokin series Industrial Panel PC (T6083, T6123 or T6153)

1 x Accessory Box that contains the following items:

- Driver CD
- User's Manual
- Screws/Cable
- 3-pin plug for terminal block
- 2.5" HDD/SSD bracket
- PCIe x 1 riser card

1.3. Ordering Information

T6083/827E	8” Intel® Celeron® 827E industrial panel PC
T6123/827E	12” Intel® Celeron® 827E industrial panel PC
T6153/827E	15” Intel® Celeron® 827E industrial panel PC

The following items are normally optional, but some vendors may include them as a standard package, or some vendors may not carry all the items.

Optional Accessories

PAC-P065W
65W AC/DC power adapter kit

PAC-P120W-FSP
120W AC/DC power adapter kit

Optional Configuration (Configure to Order Service)

SSD-25040
Intel® 2.5” 40GB SATAII SSD kit

MM-3C-2G / MM-3C-4G
DDR3-1333 2GB/4GB SDRAM

WIFI-IN1350
802.11 a/b/g/n WiFi module kit & internal wiring

ANT-D11
1 x WiFi Dual-band 2.4G/5G antenna

1.4. CD Driver Paths

Find the drivers on CD for each Windows XP and Windows 7 operating system.

Windows XP

Driver & AP	Path
CHIPSET	\Chipset
Framework 3.5	\NET Framework 3.5
VGA	\Graphic\WinXP\x64
	\Graphic\WinXP\x86
LAN	\LAN\17.1\WinXP
TOUCH	\Touch\PenMount Windows XP Embedded Universal Driver V2.2.0.283\repository

Windows 7

Driver & AP	Path
CHIPSET	\Chipset
Framework 3.5	\NET Framework 3.5
VGA	\Graphic\Win7\x64
	\Graphic\Win7\x86
LAN	\LAN\17.1\Win7
TOUCH	\Touch\PenMount Windows Universal Driver V2.2.0.283. (Win7_32_64bit_WHQL)

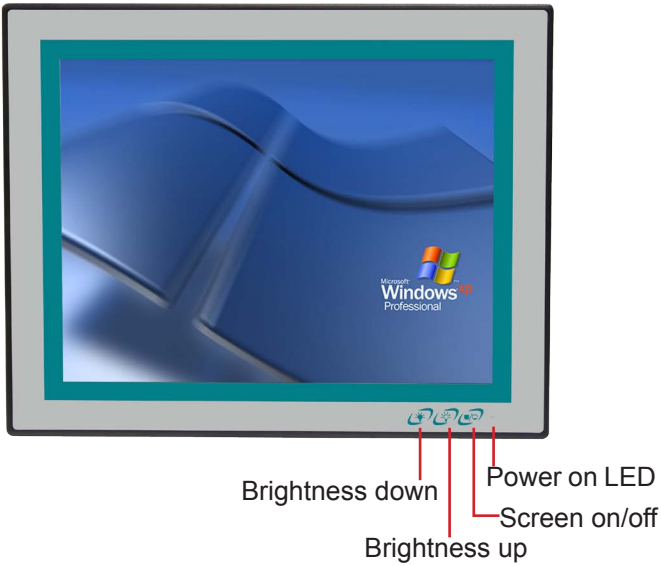
1.5. Specifications

System Kernel	
Processor	Intel® Celeron® 827E 1.4GHz processor
Chipset	Intel® HM65
System Memory	2 x DDR3 SO-DIMM Socket, supporting 1333/1066MT/s SDRAM up to 8GB
LAN Chipset	2 x Gigabit Ethernet controllers
Watchdog Timer	1 ~ 255 levels reset
I/O Ports	
Serial Ports	2 x RS-232 and 2 x isolated RS-232/485 ports, all are DSUB 9-pin
USB Ports	4 x Type-A USB ports
LAN Ports	2 x RJ-45 Gigabit Ethernet ports
DVI	1 x DVI-I connector
WiFi	2 x SMA antenna holes for optional WiFi function
Optional Port	1 x semi-piercing DSUB hole reserved for users' internal wiring
Storage	
Type 1	1 x outside accessible Primary CFast slot
Type 2	1 x outside accessible 2nd CFast slot (default) or 2.5" Drive Bay (included in Standard Accessories)
Qualification	
Certification	CE, FCC Class A
Environment	
Operating Temp.	-20 ~ 60ºC (-4 ~ 140°F)
Storage Temp.	-20 ~ 70°C (-4 ~ 158°F)
Operating Humidity	0 ~ 95% RH @40°C (non-condensing)
Vibration	5 ~ 500Hz, 2Grms Random (with CF/SSD)
Shock	Operating 15G, 11ms & Non-operating 40G, 11ms (with CF/SSD)
Mechanical	
Mounting Type	Panel Mounting and VESA-75/100 Mounting
Chassis	Panel-mounting chassis, Aluminum Front Bezel and SECC steel chassis

Dimension (W x D x H)	274.96 x 77.0 x 207.96 mm (10.82” x 3.03” x 8.18”) for T6083
	325.86 x 77.0 x 258.86 mm (12.82” x 3.03” x 10.18”) for T6123
	389.93 x 84.3 x 309.93 mm (15.35” x 3.31” x 12.20”) for T6153
Weight (Net)	4.5 kg (9.92 lb) for T6083
	5.6 kg (12.34 lb) for T6123
	7 kg (15.43 lb) for T6153
LCD Display	
Size/Type	8” TFT LCD Panel for T6083 12” TFT LCD Panel for T6123 15” TFT LCD Panel for T6153
Max. Resolution	1024 x 768, XGA
Max. Colors	16.2M
Luminance	300 cd/m² for T6083 and T6153; 500 cd/m² for T6123
Touch Screen	5-wire, Analog Resistive
Function Key	Brightness up/down, Screen on/off
Status LED	Power-on LED
Internal Sockets & Connectors	
CF Type	1 x CFast outside accessible push-pull socket
Expansion Slot	2 x Mini-Card sockets
	1 x PCI 32-bit slot (default) or 1 x PCI Express (included in Standard Accessories)
Optional	1 x semi-piercing D-SUB9 hole reserved for field-bus card
Power System	
Power Input	DC 9~36V

1.6. Locating Controls and Connectors

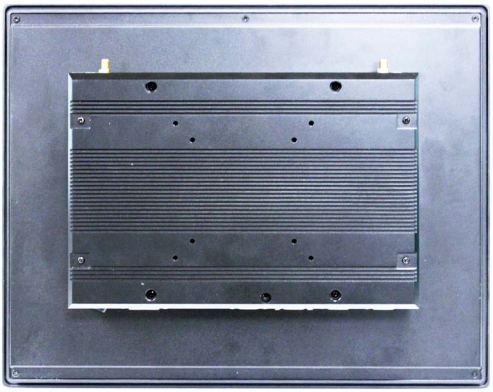
Front View of T6153



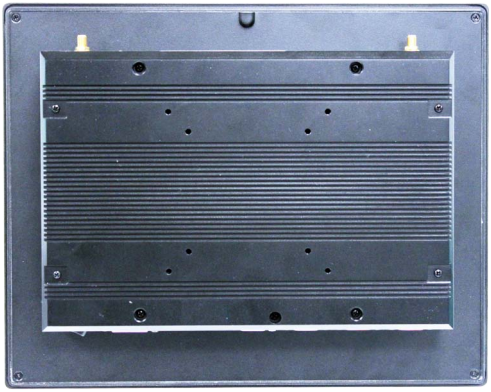
Front View of T6123

Front View of T6083

Rear View of T6153

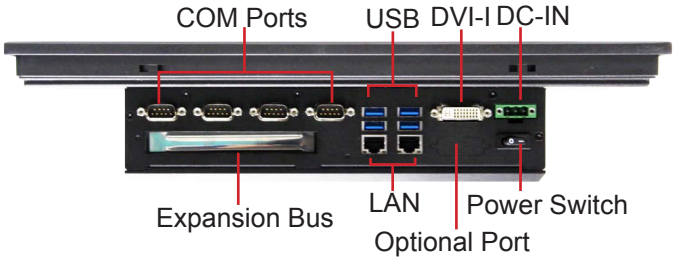


Rear View of T6123



Rear View of T6083

Bottom View of T6153

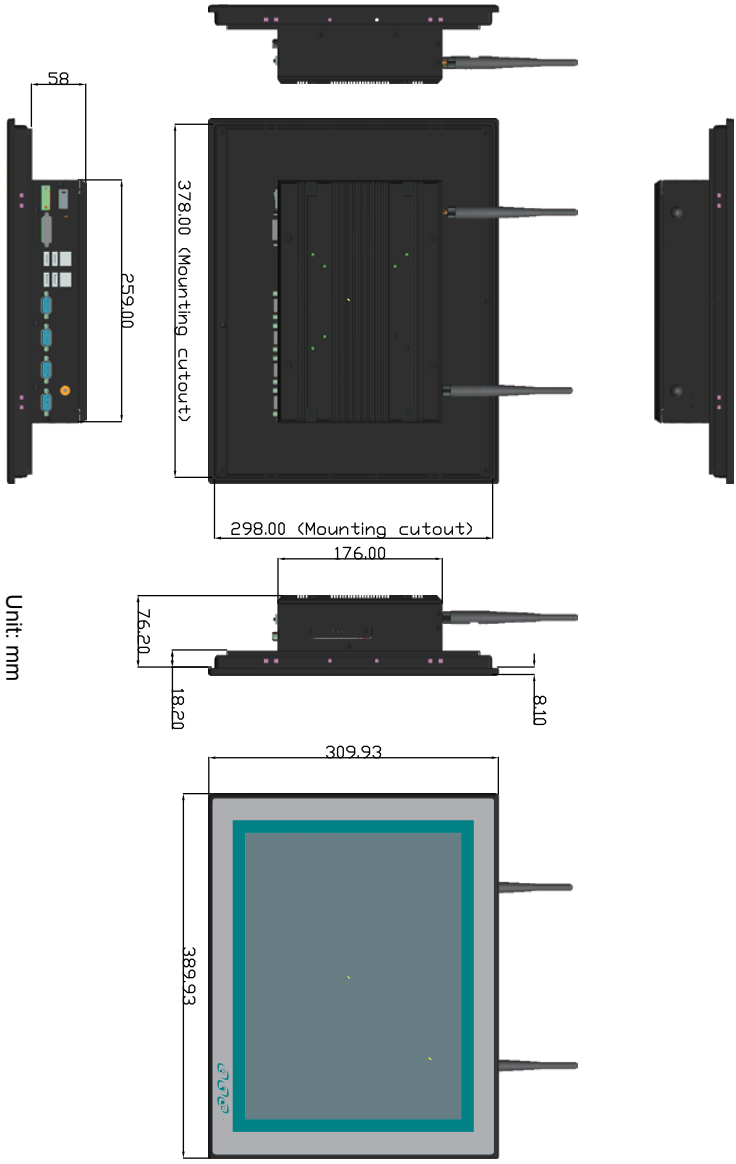


Bottom View of T6123

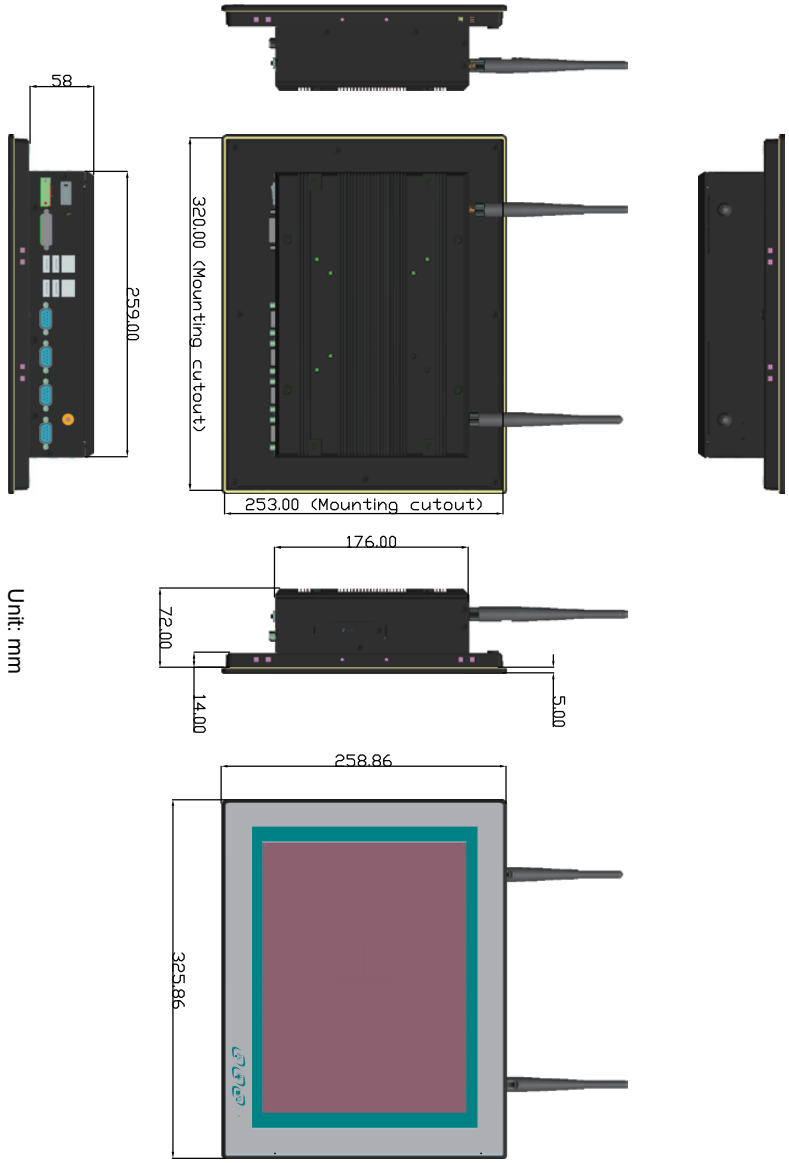
Bottom View of T6083

1.7. Dimensions

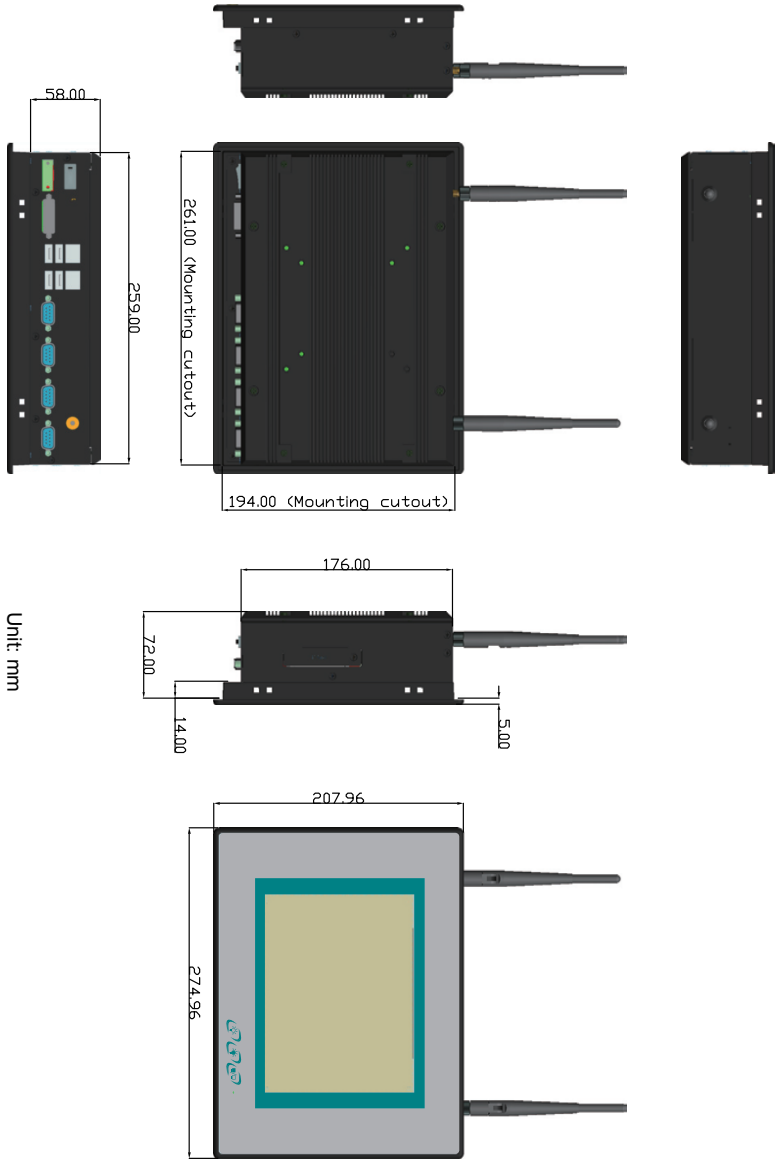
T6153



T6123


58
259.00
320.00 (Mounting cutout)
253.00 (Mounting cutout)
176.00
72.00
14.00
5.00
258.86
325.86
Unit: mm

T6083


58.00
259.00
261.00 (Mounting cutout)
194.00 (Mounting cutout)
176.00
72.00
14.00
5.00
207.96
274.96
Unit: mm

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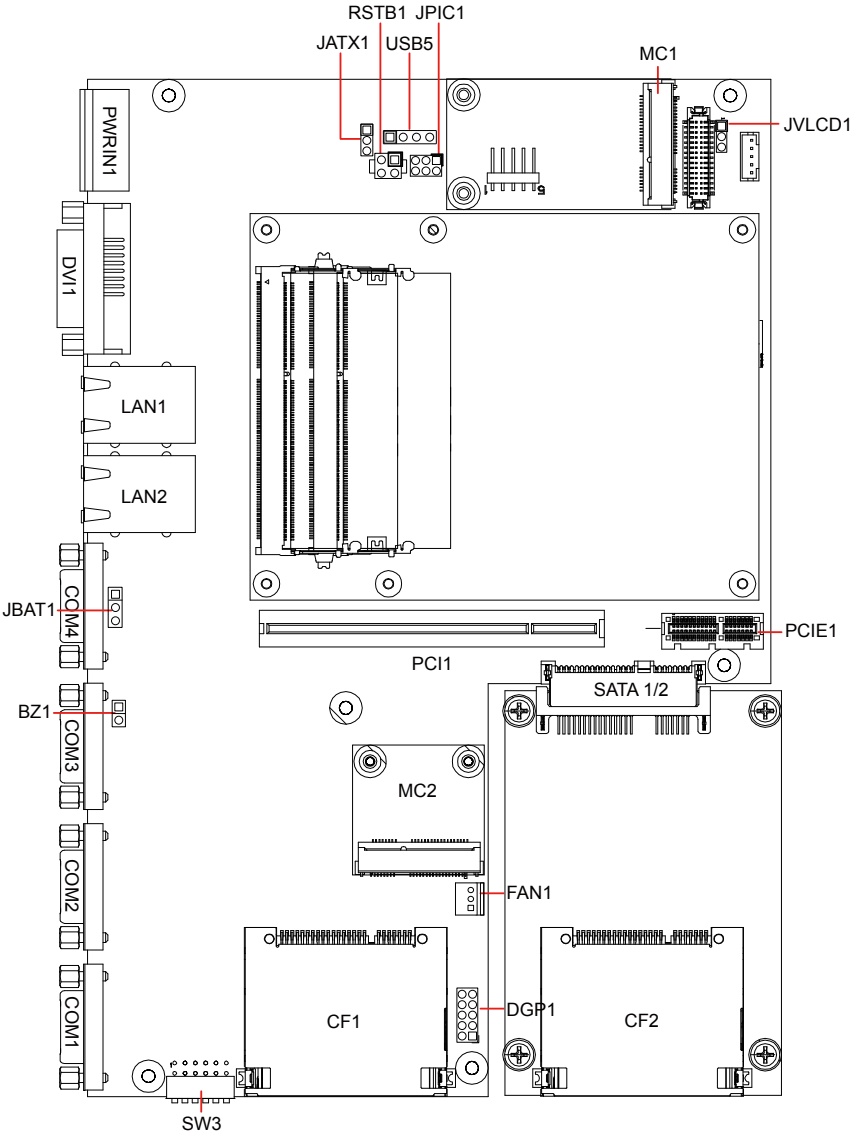
Chapter 2

Engine of the IPPC

2.1. Board Layout

The engine of Tokin industrial panel PC is constructed with the carrier board PBC-9005P and SCDB-1443 (the CFast board).



2.2. Jumpers and Connectors

2.2.1. Jumpers & Connectors List

Jumpers

Label	Function
JBAT1	CMOS Jumper Setting
JATX1	AT/ATX Mode Selector
JVLCD1	LVDS VCC Selector
SW3	RS232/485 Mode Switch

Connectors

Label	Function
JPIC1	PIC Programming Pin Header
USB5	USB KEY PRO Pin Header
BZ1	Buzzer Pin Header
DGP1	External 80 Port Pin Header
RSTB1	Reset Button Pin Header
FAN1	Fan Connector
MC1/2	Mini Card Slots (MC1 is full-size; MC2 is half-size)
CF1/2	CFast Sockets
PWRIN1	DC Adapter Power Input
DVI1/2	DVI-I or DVI-D (DVI2 is DVI-I for T6083/6123/6153, but DVI-D for EPC-6300; DVI1 is DVI-I for EPC-6300, but optional for the rest)
LAN1/2	Ethernet Connectors (includes USB Connectors)
COM1/2	RS-232/RS-485 Serial Port Connectors
COM3/4	RS-232 Serial Port Connectors
SATA1/2	Serial ATA + Power Connectors
PCI1	PCI Interface Slot
PCIE1	PCIex1 Interface Slot

2.2.2. Jumper Setting

JBAT1: Clears CMOS Setting
Connector Type: onboard 1 x 3-pin 2.54mm pin-header

Pin	Description	
1-2	Keeps CMOS (default)	
2-3	Clears CMOS	

JATX1: AT/ATX Mode Selector
Connector Type: onboard 1 x 3-pin 2.00mm pin-header

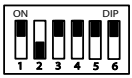
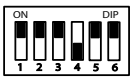
Pin	Description	
1-2	AT Mode	
2-3	ATX Mode (default)	

JVLCD1: LVDS VCC Selector
Connector Type: onboard 1 x 3-pin 2.00mm pin-header

Pin	Description	
1-2	VCC3 (default)	
2-3	VCC5	

SW3: RS232/485 Mode Switch

Connector Type: onboard 1 x 6-pin DIP switch

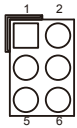
Pin Position	Description	
1,5-ON	COM1 RS485 Mode	
1,5-OFF	COM1 RS232 Mode	
2-ON	COM1 RS485 Terminators connected	
2-OFF	COM1 RS485 Terminators connected	
3,6-ON	COM2 RS485 Mode	
3,6-OFF	COM2 RS232 Mode	
4-ON	COM2 RS485 Terminators connected	
4-OFF	COM2 RS485 terminators connected	

Note: 1~6 OFF is the default.

2.2.3. Pin Assignments for Connectors

JPIC1: External PIC Programming Pin Header
Connector Type: onboard 2.0mm pitch 2 x 3-pin headers

Pin	Description	Pin	Description
1	PIC_TX	2	ICSP-CLK
3	ICSP-DAT	4	GND
5	VCC5	6	MCU_RST



USB5: USB KEY PRO Pin Header
Connector Type: onboard 2.54mmmm pitch 4-pin header

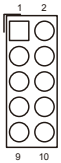
Pin	Description	Pin	Description
1	VCC5	2	D-
3	D+	4	GND

BZ1: Buzzer Pin Header
Connector Type: onboard 2.54mmmm pitch 2-pin header

Pin	Description	Pin	Description
1	VCC5	2	GND

DGP1: External 80 Port Pin Header
Connector Type: onboard 2.0mm pitch 10-pin header

Pin	Description	Pin	Description
1	CLK	2	GND
3	FRAME#	4	LAD0
5	PLTRST#	6	NC
7	LAD3	8	LAD2
9	VCC3	10	LAD1



RSTB1: Reset Button Pin Header
Connector Type: onboard 2.54mm pitch 4-pin headers

Pin	Description	Pin	Description
1	SYS_RESET#	2	GND
3	PWR_IN_SW#	4	GND

FAN1: Fan Connector
Connector Type: onboard 3-pin wafer connector

Pin	Description
1	GND
2	+12V
3	NC

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Chapter 3

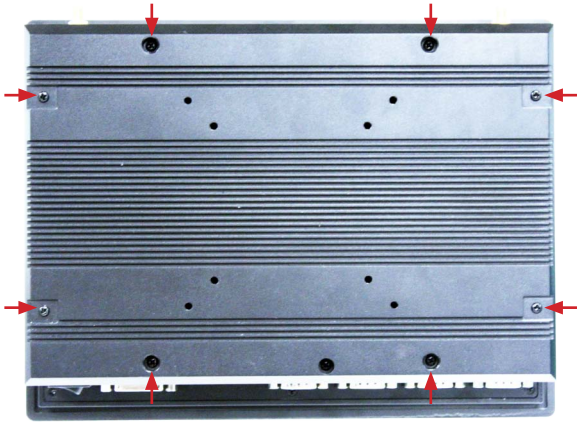
Installation and Maintenance

3.1. Install SSD, PCIe, PCI and Mini-card

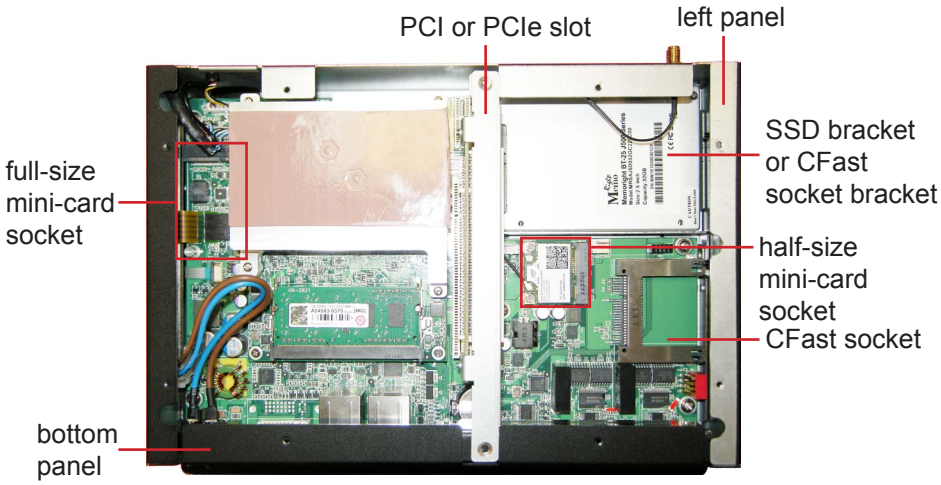
The Tokin industrial panel PC is based upon modular design for easier maintenance. This section will cover the simple hardware installations for the IPPC. Make sure the IPPC is powered off before any action is taken.

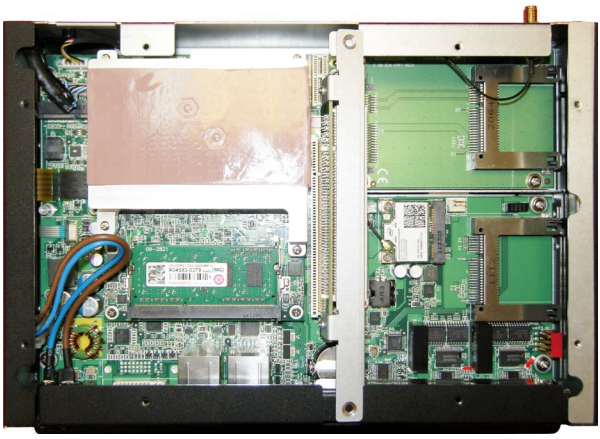
3.1.1. Remove the Rear Panel

1. Place the Industrial PC upside down. See the picture below and find where the screws are. Loosen and remove these screws and save them for later use.



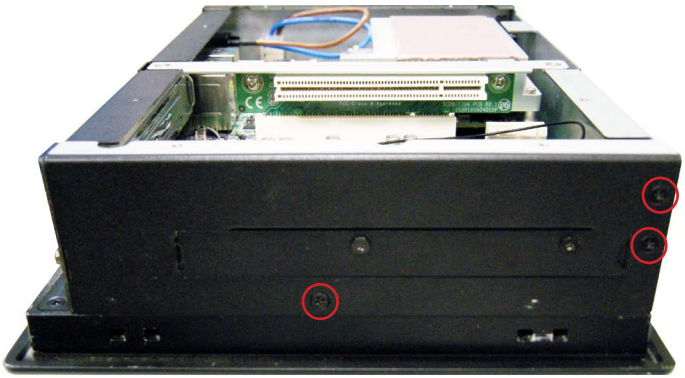
2. Gently dismount the rear panel. Take a look at its inside.



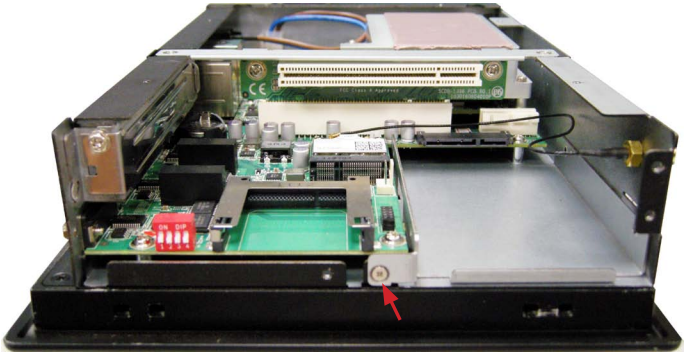


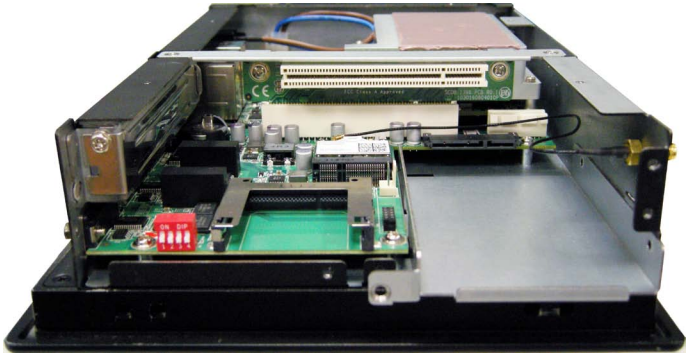
3.1.2. Install SSD

1. Loosen and remove the four screws at the left and right panels. Gently dismount the right panel.

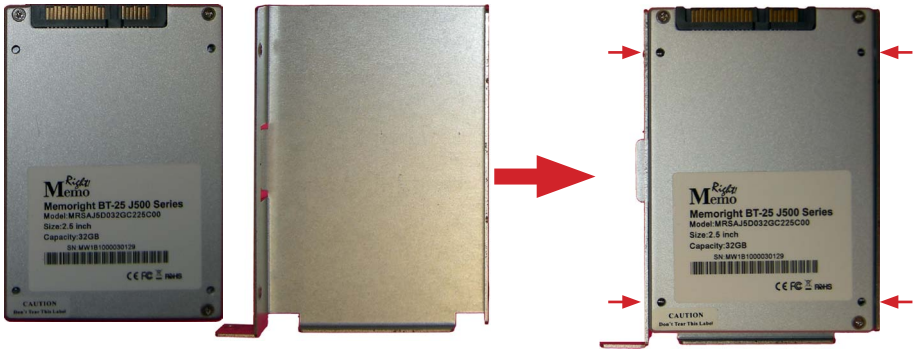


2. Loosen and remove the screw that fixes the SSD bracket. Then remove the bracket.

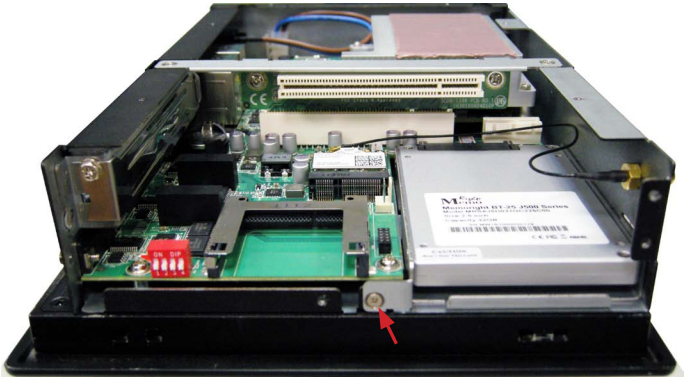




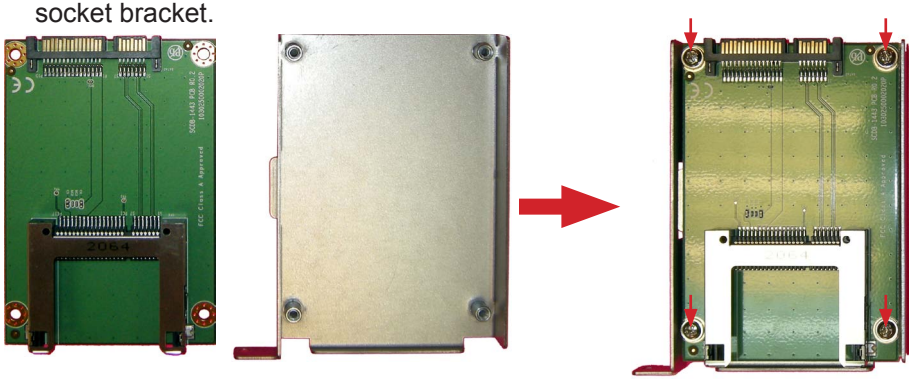
3. Attach the SSD to the bracket and fix them together by using screws at the four corners.

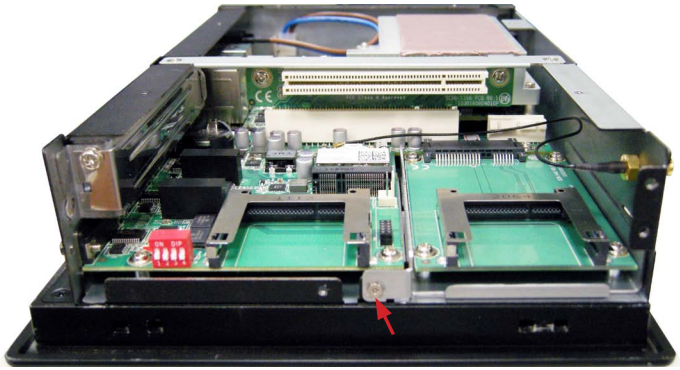


4. Restore the bracket (with the SSD) and fix them in place.



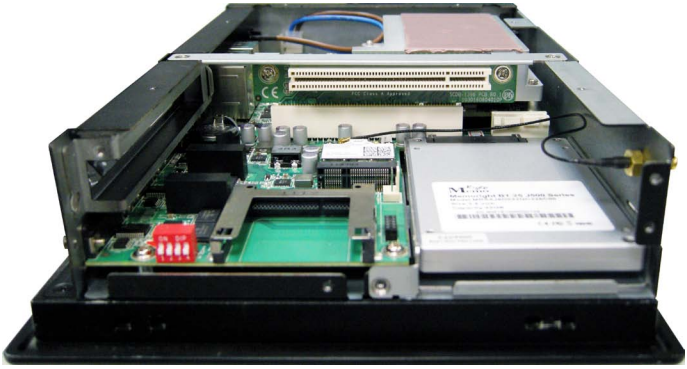
5. The SSD barcket is one of the standard accessories included in the accessory box. This SSD bracket can be replaced by an additional CFast socket bracket.



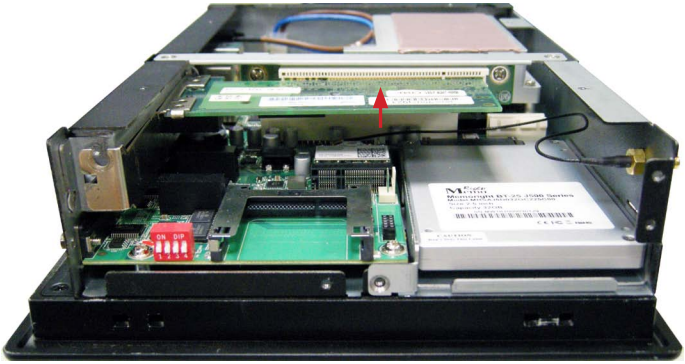


3.1.3. Install PCI Card

1. Loosen and remove the screw as marked in the picture below. Carefully dismount the bracket.

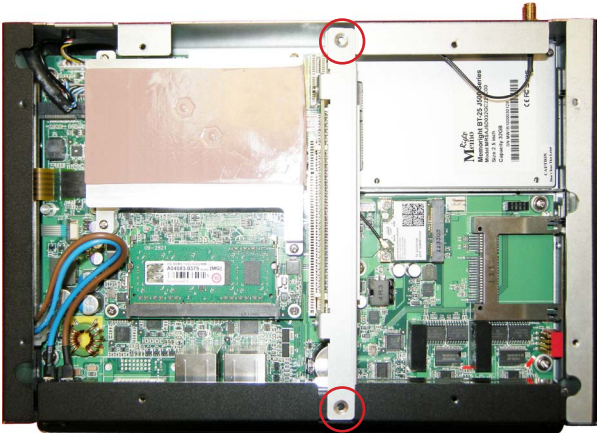


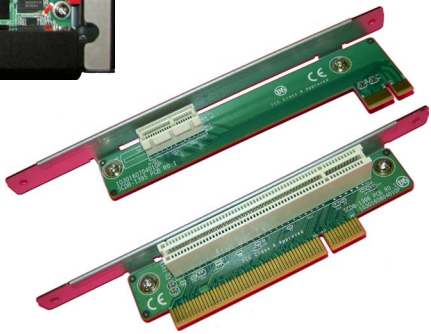
2. Insert your desired PCI card into the slot and fix it in place.



3.1.4. Install PCIe Card

1. The PCI slot can be replaced with the PCIe slot included in the accessory kit. Loosen and remove the two screws that fixes the PCI slot first of all. Carefully remove the PCI slot and insert the PCIe slot in place.

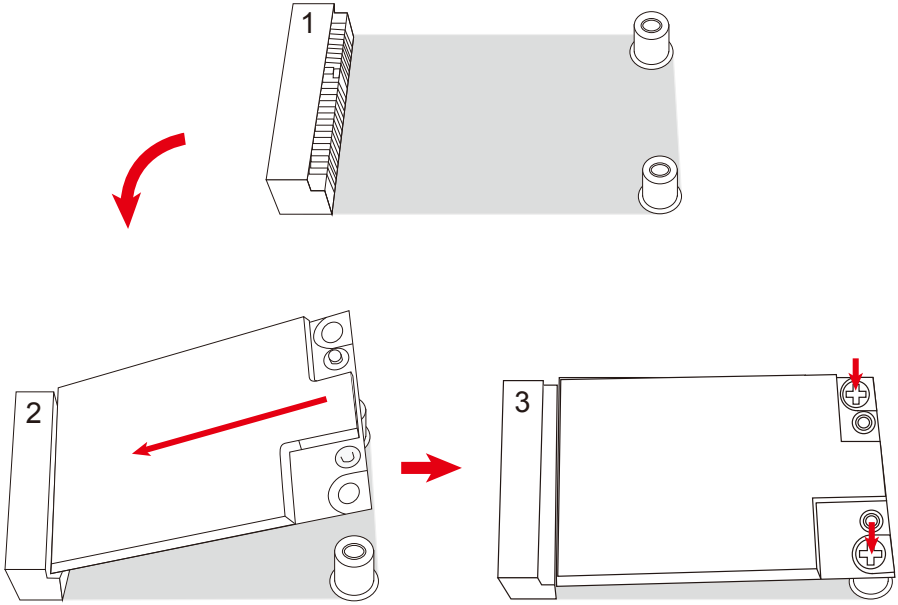




2. Insert your desired PCIe x 1 card into the slot and fasten it.

3.1.5. Install Mini-card

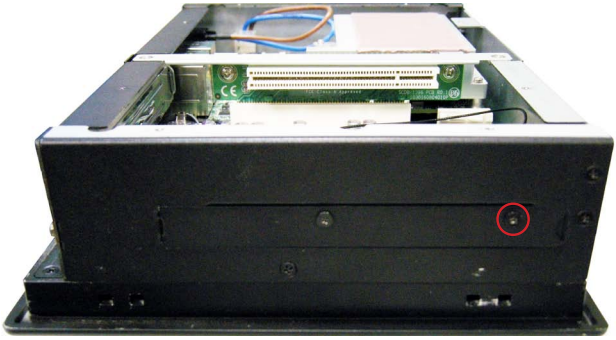
1. Locate the Mini-card socket.
2. Plug a Bluetooth or HSUPA module to the socket's connector by a slanted angle. Note the notch on the card should meet the break on the connector.
3. Press down the module and fix it in place using two screws.



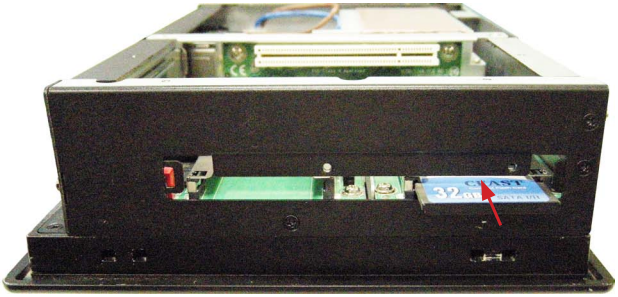
3.2. Install/Uninstall CFast Card

If the OS is installed on the CFast card, power off the IPPC before proceeding with the uninstallation of CFast Card.

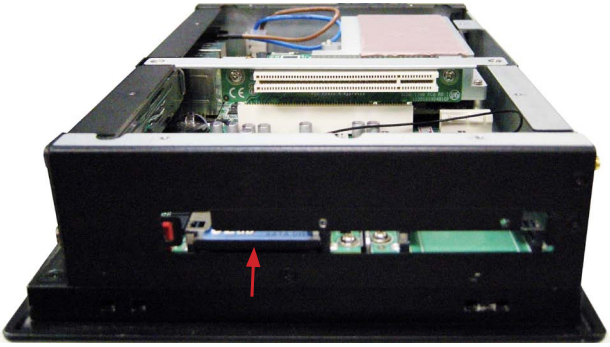
1. See the picture below. Loosen and remove the screw. Dismount the CFast card door. Keep the card door for later use.

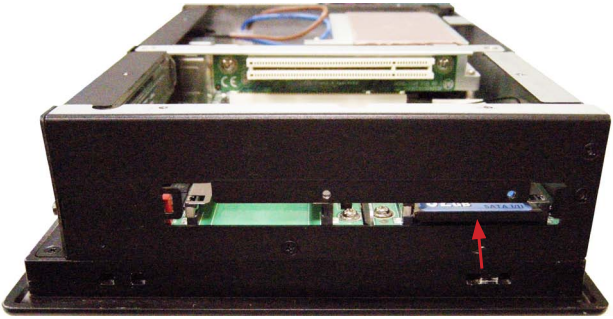


2. Insert your CFast card into either of the slots as the pictures below show.



3. If later it is needed to remove the CFast card, simply remove the card door and push-eject the CFast card.





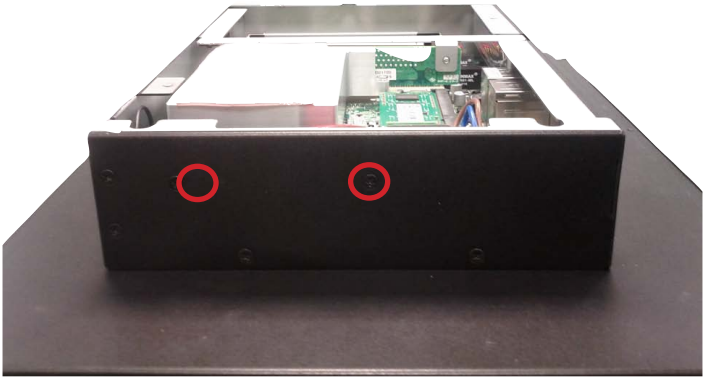
3.3. Install Internal USB Drive

As some critical application programs rely on USB keys to run, an USB drive is therefore necessary to store the related encrypted keys and digital certificates. The Tokin-Series IPPC supports an USB drive to work inside the chasis to deliver extrodinary protection against any unauthorized tamper to the USB drive from the outside.

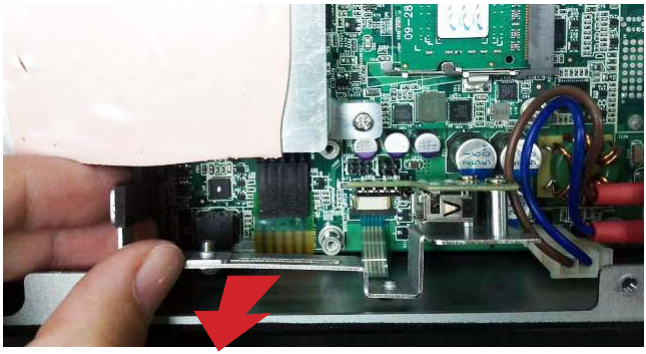
To install an Internal USB drive:

1. Remove the rear panel from the IPPC as described in 3.1.1. Remove the Rear Panel on page 24.

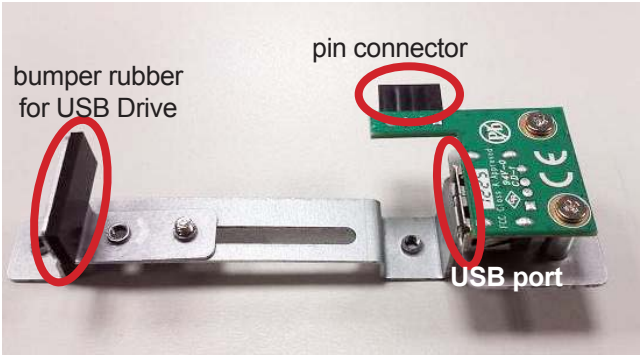
2. See the picture below. From the right side of the chassis, loosen and remove the two screws that fix the internal USB bracket. Keep the screws for later reinstallation.



3. Detach the internal USB bracket from the carrier board.

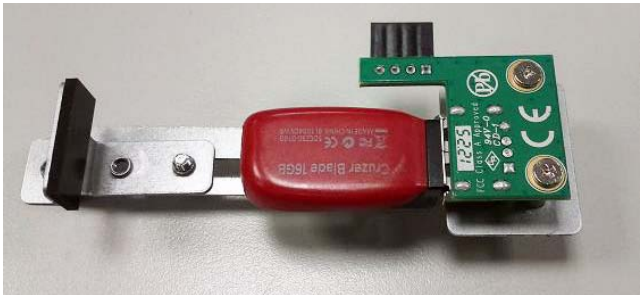


Detach the internal USB bracket.

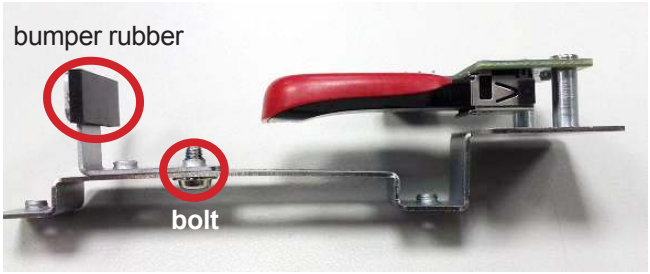


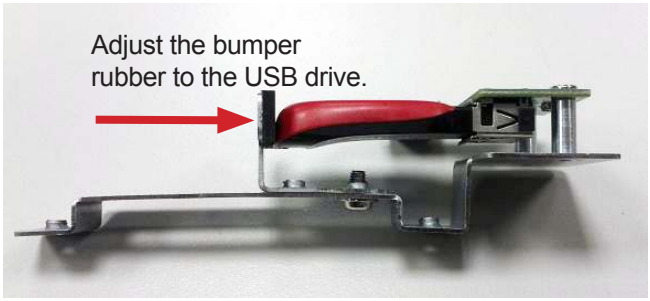
Take a look at the detached USB bracket.

4. Install an USB drive to the USB bracket.

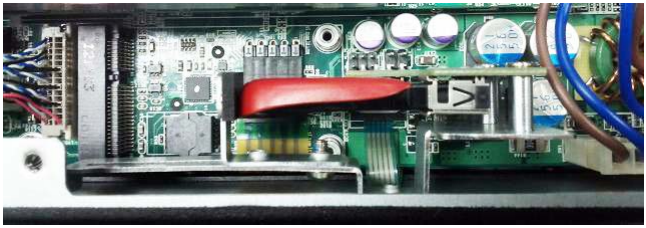


5. To reinforce the installation of the USB drive, slide the bumper rubber to the installed USB drive by loosening and relocating the bolt as displayed in the picture below.





6. Find the internal USB connector on the carrier board. Reinstall the internal USB bracket (bearing the USB drive) by the two screws you saved in step 2.



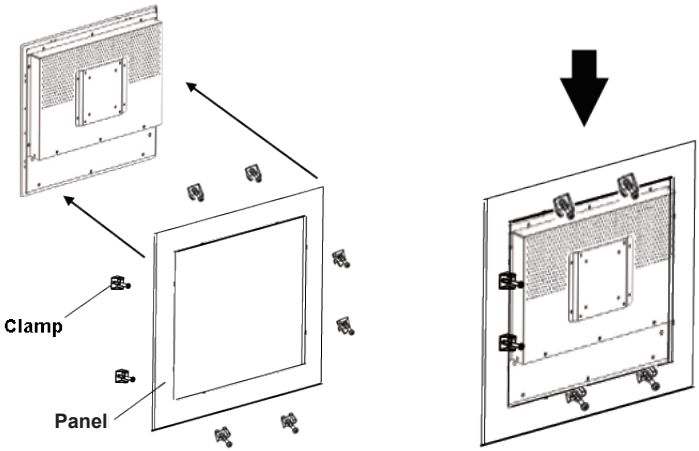
7. Restore the rear panel to the IPPC.

3.4. Panel Mounting

There are two approaches to mount the IPPC to a panel - by either clamps or brackets. The following sections will walk your through these two approaches.

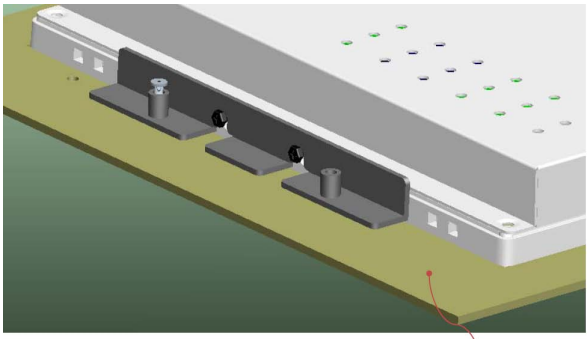
3.4.1. Panel Mounting with Clamps

1. Have the panel-mounting clamps included in the accessory pack.
2. Attach the clamps to the slots around the edges of the panel to mount.
3. Fix the IPPC to panel by using screws on the said clamps.



3.4.2. Panel Mounting with Brackets

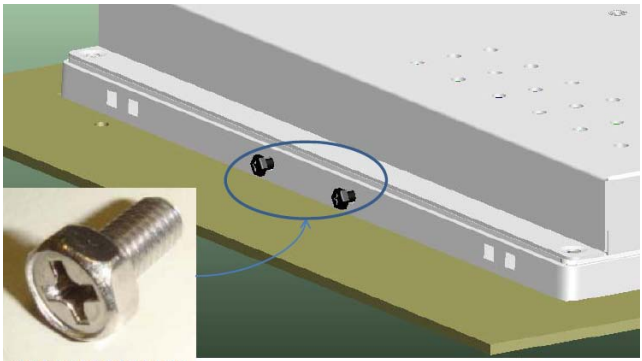
Before you proceed, make sure the panel to mount is no thicker than 4mm.



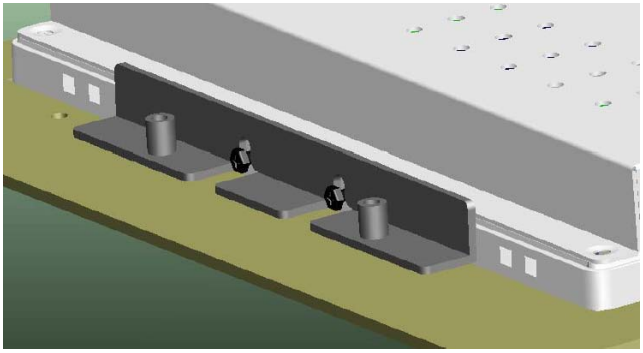
The panel to mount must be no thicker than 4mm.

Then follow the steps below to mount the IPPC to a panel using brackets:

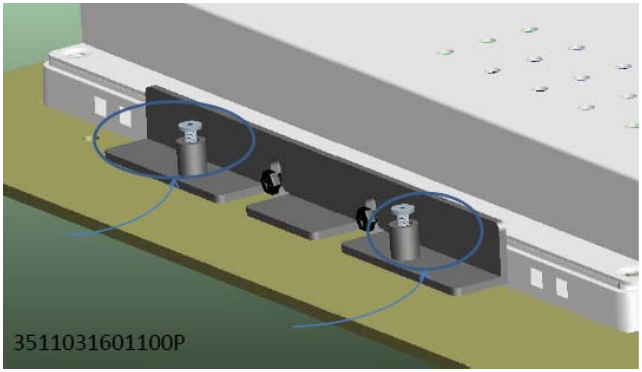
1. Attach two screws to each left and right sides of the IPPC.



2. Assemble the brackets to each side. Fasten the screws.



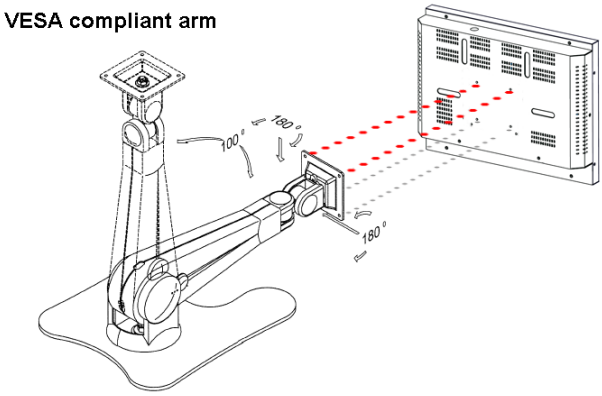
3. Fine-tune the mounting firmness by adjusting bolts tightness.



3.5. VESA Arm Mounting

The Tokin-Series supports VESA arm mounting of 75 x 75mm or 100 x 100mm mounting hole pattern. See the illustration below for the example.

1. Have the VESA arm and the four mounting screws that come with it.
2. Locate the VESA compliant holes at the rear of the IPPC.
3. Attach the VESA arm to the rear of the IPPC by meeting the screws holes on the VESA arm and the IPPC's rear.
4. Fix them together with four screws.

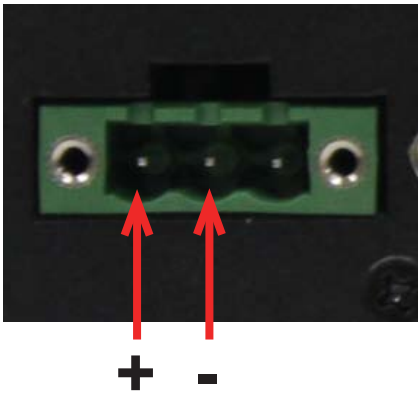


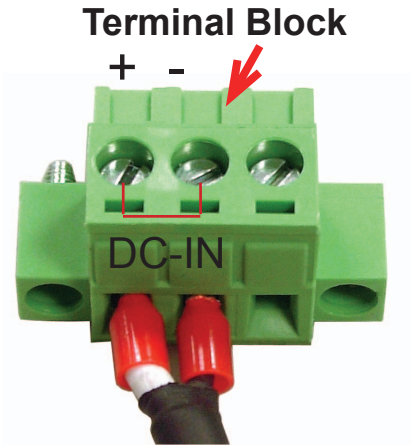
3.6. Wire the DC-Input Power Source

> **Warning** Only trained and qualified personnel are allowed to install or replace this equipment.

Follow the instructions below for connecting the computer to a DC-input power source.

1. Before wiring, make sure the power source is disconnected.
2. Find the terminal block in the accessory box.
3. Use the wire-stripping tool to strip a short insulation segment from the output wires of the DC power source.
4. Identify the positive and negative feed positions for the terminal block connection. See the symbols printed on the rear panel indicating the polarities and DC-input power range in voltages.
5. Insert the exposed wires into the terminal block plugs. Only wires with insulation should extend from the terminal block plugs. Note that the polarities between the wires and the terminal block plugs must be positive to positive and negative to negative.
6. Use a slotted screwdriver to tighten the captive screws. Plug the terminal block firmly, which wired, into the receptacle on the rear panel.





Chapter 4

Driver & AP

4.1. Before Installation

After everything aforementioned is done, proceed to install the necessary drivers and the application so the IPPC can function for you. The following instructions take Windows XP (x86) as the exemplary OS. Different OS may vary slightly regarding driver/AP installation, but generally they are similar. Note to install the drivers as the sequece below:

CHIPSET→Framework 3.5→VGA→LAN→TOUCH

Follow This Procedure to install all necessary pieces of software in most cases to prevent errors.

Find the drivers & AP for Windows 7 & Windows XP on the CD that goes with your purchase. The paths to find them on CD are tabulated as below.

Windows XP

Driver & AP	Path
CHIPSET	\Chipset
Framework 3.5	\NET Framework 3.5
VGA	\Graphic\WinXP\x64
	\Graphic\WinXP\x86
LAN	\LAN\17.1\WinXP
TOUCH	\Touch\PenMount Windows XP Embedded Universal Driver V2.2.0.238\repository

Windows 7

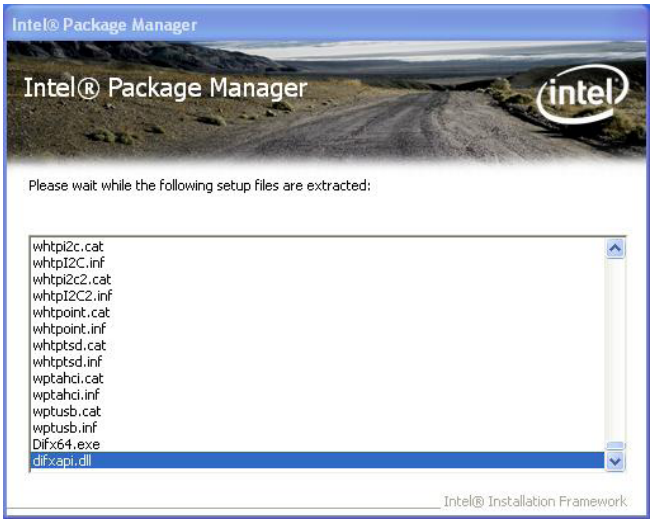
Driver & AP	Path
CHIPSET	\Chipset
Framework 3.5	\NET Framework 3.5
VGA	\Graphic\Win7\x64
	\Graphic\Win7\x86
LAN	\LAN\17.1\Win7
TOUCH	\Touch\PenMount Windows Universal Driver V2.2.0.283. (Win7_32_64bit_WHQL)

4.2. Drivers

4.2.1. CHIPSET

1. Run the executable file “infinst_autol.exe” at the path (\Chipset) as described in 4.1. Before Installation on page 42.

   The installation wizard then opens and starts to extract the files required for driver installation.



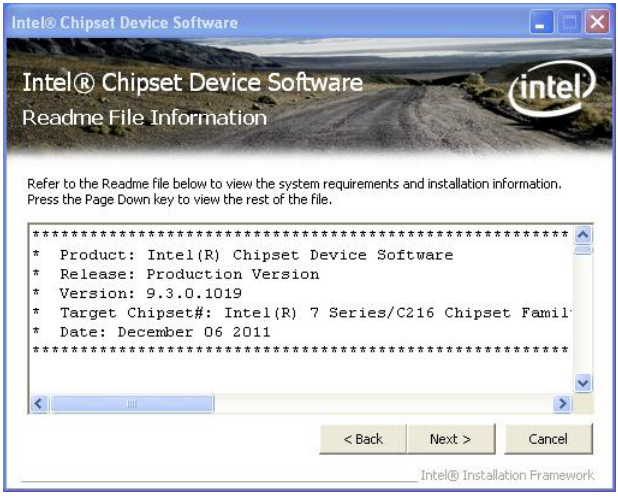
2. Click **Next** to proceed.

Intel® Chipset Device Software
Intel® Chipset Device Software
intel
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

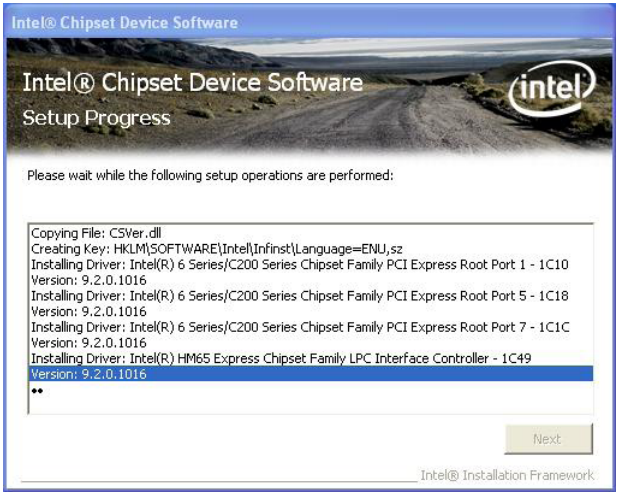
3. Read the license agreement and click **Yes** to proceed.

Intel® Chipset Device Software
Intel® Chipset Device Software
License Agreement
intel
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

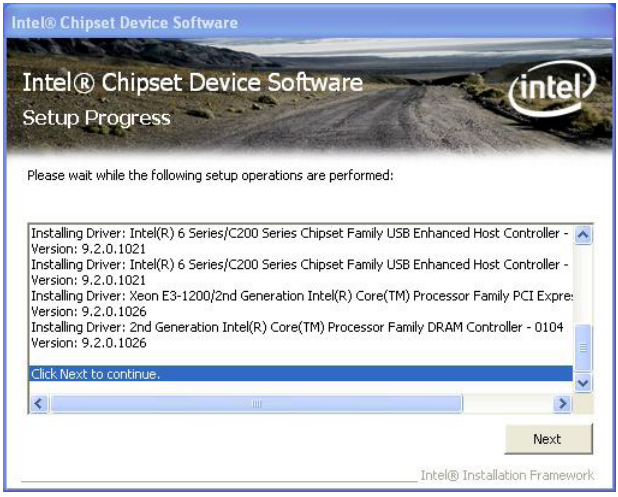
4. Read the readme file and click **Next** to proceed.


Intel® Chipset Device Software
Intel® Chipset Device Software
Readme File Information
intel
Refer to the Readme file below to view the system requirements and installation information.
Press the Page Down key to view the rest of the file.
****
* Product: Intel(R) Chipset Device Software
* Release: Production Version
* Version: 9.3.0.1019
* Target Chipset#: Intel(R) 7 Series/C216 Chipset Famil
* Date: December 06 2011
****
< Back
Next >
Cancel
Intel® Installation Framework

5. The installation wizard then starts to proceed with some setup operations.


Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
intel
Please wait while the following setup operations are performed:
Copying File: CSVer.dll
Creating Key: HKLM\SOFTWARE\Intel\Infinst\Language=ENU,sz
Installing Driver: Intel(R) 6 Series/C200 Series Chipset Family PCI Express Root Port 1 - 1C10
Version: 9.2.0.1016
Installing Driver: Intel(R) 6 Series/C200 Series Chipset Family PCI Express Root Port 5 - 1C18
Version: 9.2.0.1016
Installing Driver: Intel(R) 6 Series/C200 Series Chipset Family PCI Express Root Port 7 - 1C1C
Version: 9.2.0.1016
Installing Driver: Intel(R) HM65 Express Chipset Family LPC Interface Controller - 1C49
Version: 9.2.0.1016
Next
Intel® Installation Framework

6. Once the setup operations are through, click **Next** to proceed.


Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Progress
intel
Please wait while the following setup operations are performed:
Installing Driver: Intel(R) 6 Series/C200 Series Chipset Family USB Enhanced Host Controller -
Version: 9.2.0.1021
Installing Driver: Intel(R) 6 Series/C200 Series Chipset Family USB Enhanced Host Controller -
Version: 9.2.0.1021
Installing Driver: Xeon E3-1200/2nd Generation Intel(R) Core(TM) Processor Family PCI Expre
Version: 9.2.0.1026
Installing Driver: 2nd Generation Intel(R) Core(TM) Processor Family DRAM Controller - 0104
Version: 9.2.0.1026
Click Next to continue.
Next
Intel® Installation Framework

7. Click **Finish** to finish and quit the driver installation.

Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Is Complete
intel
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

4.2.2. Framework 3.5

1. Run the executable file “NET Framework 3.5.exe” at the suggested path (\ NET Framework 3.5) as described in 4.1. Before Installation on page 42.

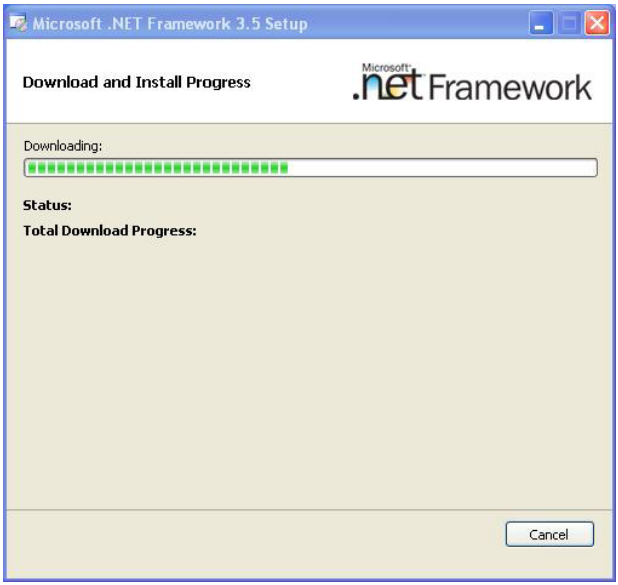
   Files extraction is then triggered for the driver installation.

   Once the files extraction is through, the installation wizard opens.

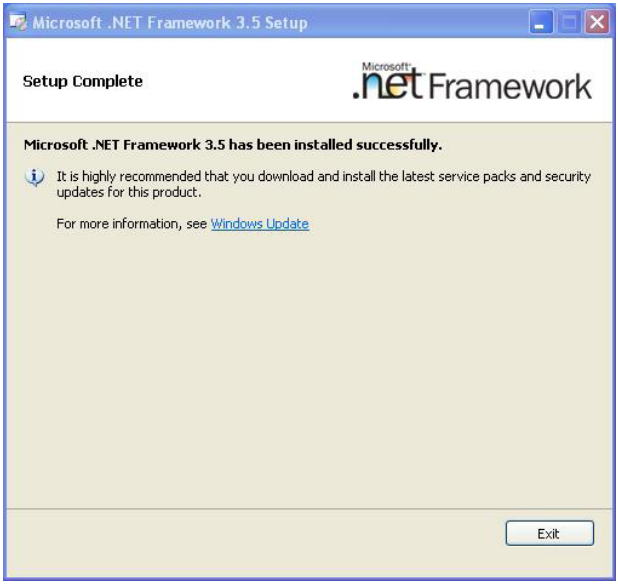
2. Select **I have read and ACCEPT the terms of the License Agreement** and click **Install** to proceed.

Microsoft .NET Framework 3.5 Setup
Welcome to Setup
Microsoft .net Framework
Be sure to carefully read and understand all the rights and restrictions described in the license terms. You must accept the license terms before you can install the software.
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS
Press the Page Down key to see more text.
Print
I have read and ACCEPT the terms of the License Agreement
I DO NOT ACCEPT the terms of the License Agreement
Send information about my setup experiences to Microsoft Corporation.
Details regarding the data collection policy
Download File Size: 60 MB
Download Time Estimate: 2 hr 27 min (56 kbps)
16 min (512 kbps)
Install >
Cancel

3. The driver installation then starts and progresses.



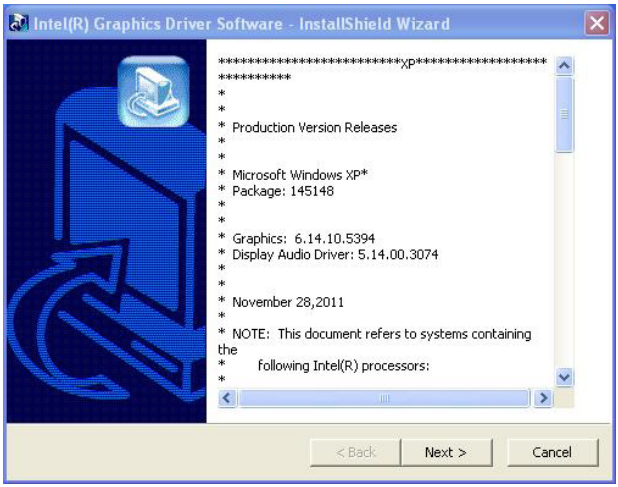
4. Once the installation is through, click **Exit** to finish and quit the installtion.


Microsoft .NET Framework 3.5 Setup
Setup Complete
Microsoft .net Framework
Microsoft .NET Framework 3.5 has been installed successfully.
It is highly recommended that you download and install the latest service packs and security updates for this product.
For more information, see Windows Update
Exit

4.2.3. VGA

1. Run the executable file “winxp_14469.exe” at the suggested path (\Graphic\WinXP\x86) as described in 4.1. Before Installation on page 42.

   The installation wizard then opens.



2. Click **Next** to proceed.

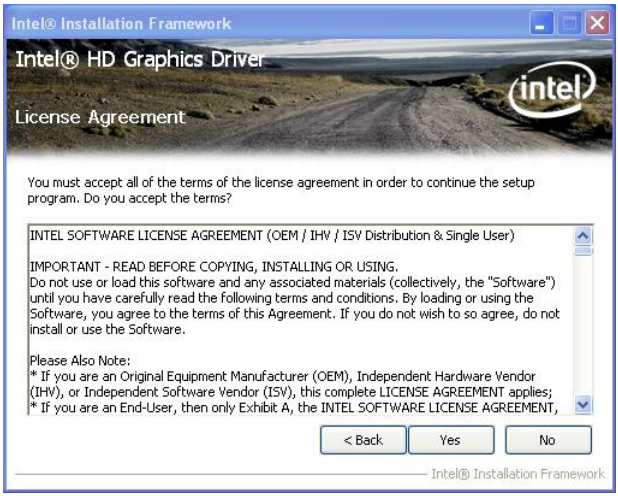
   The installation wizard then starts to extract the files required for the installation.

Intel(R) Graphics Driver Software - InstallShield Wizard
Extracting Files
The contents of this package are being extracted.
Please wait while the InstallShield Wizard extracts the files needed to install Intel(R) Graphics Driver Software on your computer. This may take a few moments.
Extracting hkcmd.exe...
InstallShield
< Back
Next >
Cancel

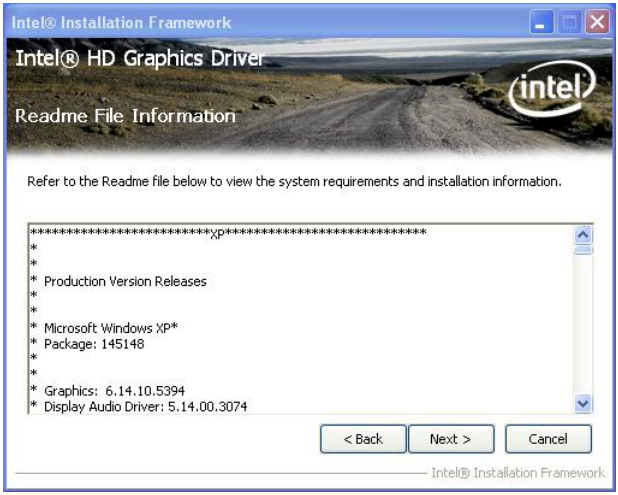
3. Once the files extraction is through, click **Next** to proceed.

Intel® Installation Framework
Intel® HD Graphics Driver
Welcome to the Setup Program
This setup program will install the following components:
- Intel® HD Graphics Driver
It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

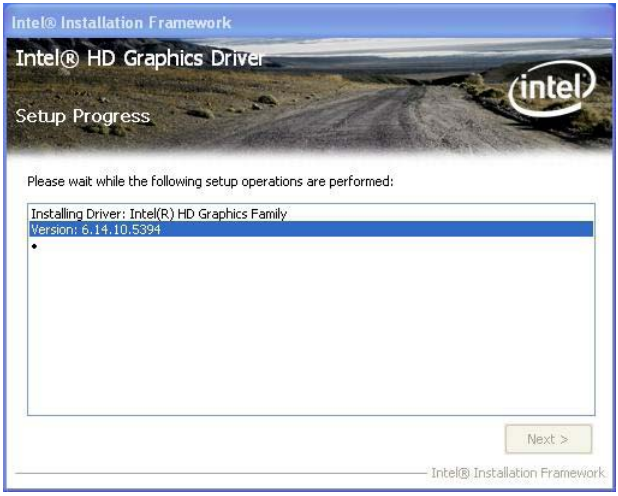
4. Read the license agreement and click **Yes** to proceed.


Intel® Installation Framework
Intel® HD Graphics Driver
License Agreement
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
* If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE AGREEMENT,
< Back
Yes
No
Intel® Installation Framework

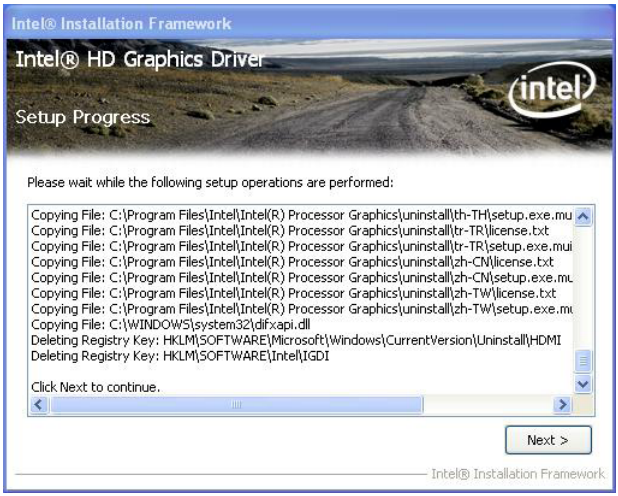
5. Read the readme file and click **Next** to proceed.



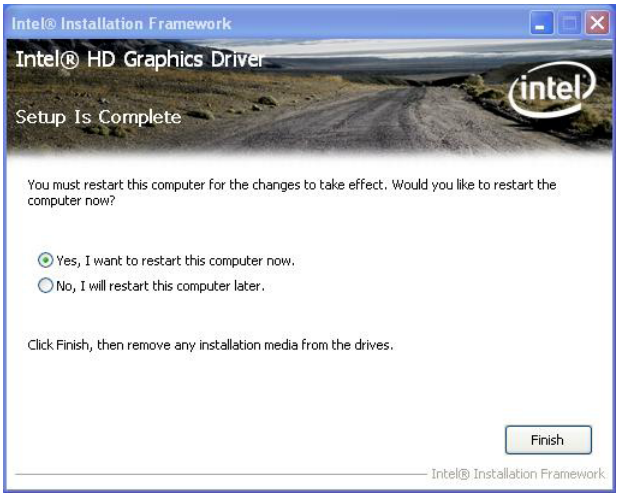
Setup then starts and progresses.



6. Once the setup is through, click **Next** to proceed.


Intel® Installation Framework
Intel® HD Graphics Driver
Setup Progress
Please wait while the following setup operations are performed:
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\th-TH\setup.exe.mu
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\tr-TR\license.txt
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\tr-TR\setup.exe.mui
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\zh-CN\license.txt
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\zh-CN\setup.exe.mu
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\zh-TW\license.txt
Copying File: C:\Program Files\Intel\Intel(R) Processor Graphics\uninstall\zh-TW\setup.exe.mu
Copying File: C:\WINDOWS\system32\difxapi.dll
Deleting Registry Key: HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\HDMI
Deleting Registry Key: HKLM\SOFTWARE\Intel\IGDI
Click Next to continue.
Next >
Intel® Installation Framework

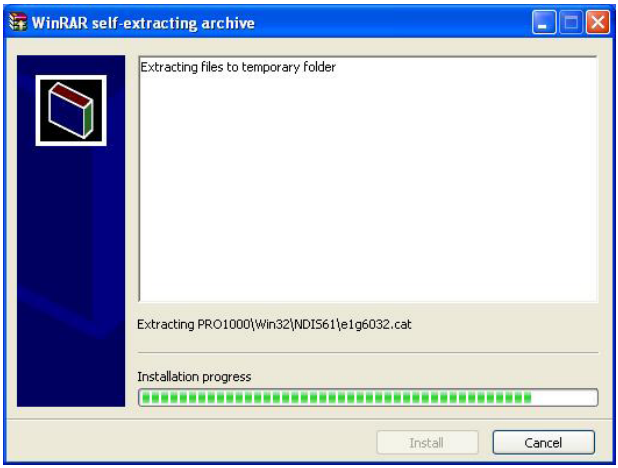
7. Select **Yes, I want to restart this computer now** and click **Finish**.


Intel® Installation Framework
Intel® HD Graphics Driver
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

4.2.4. LAN

1. Run the executable file “PROWin32.exe” at the suggested path (\LAN\17.1\ WinXP) as described in 4.1. Before Installation on page 42.

   Files extraction then starts and progresses.



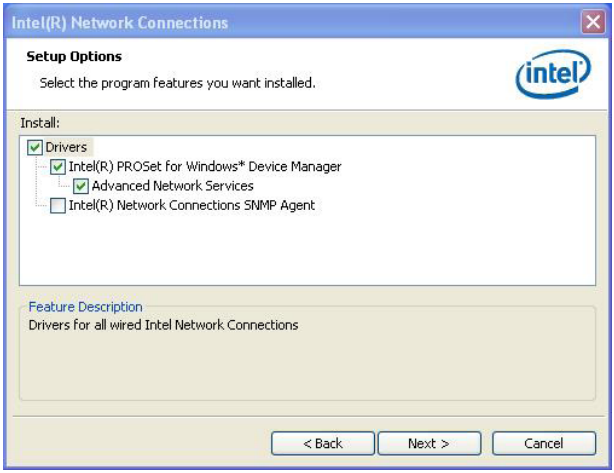
2. Once the files extraction is through, click **Next** to proceed.

Intel(R) Network Connections - InstallShield Wizard
Welcome to the InstallShield Wizard for
Intel(R) Network Connections
intel
Installs drivers, Intel(R) PROSet for Windows* Device Manager, and Advanced Networking Services.
WARNING: This program is protected by copyright law and international treaties.
InstallShield
< Back
Next >
Cancel

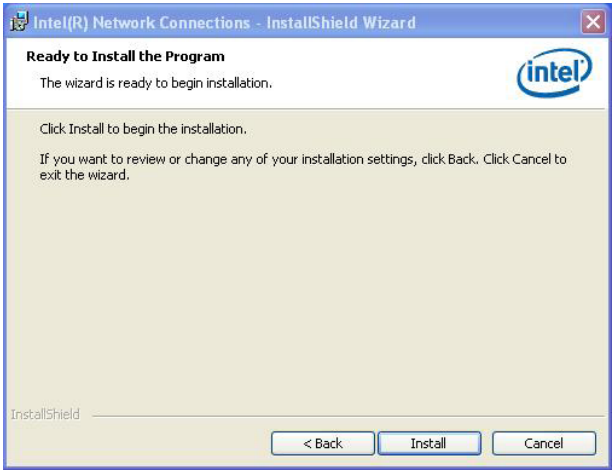
3. Read the agreement. Select **I accept the terms in the License agreement** and click **Next** to proceed.

Intel(R) Network Connections - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
INTEL SOFTWARE LICENSE AGREEMENT
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not copy, install, or use this software and any associated materials (collectively, the "Software") provided under this license agreement ("Agreement") until you have carefully read the following terms and conditions.
By copying, installing, or otherwise using the Software, you agree to be bound by the terms of this Agreement. If you do not agree to the terms of this Agreement, do not copy, install, or use the Software.
I accept the terms in the license agreement
I do not accept the terms in the license agreement
Print
InstallShield
< Back
Next >
Cancel

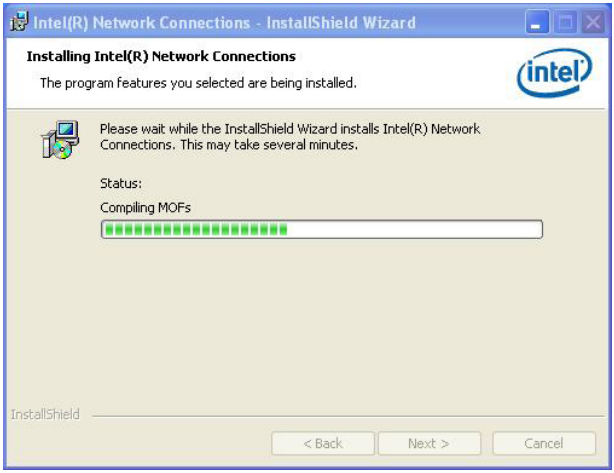
4. Select the program features to install and click **Next** to proceed.



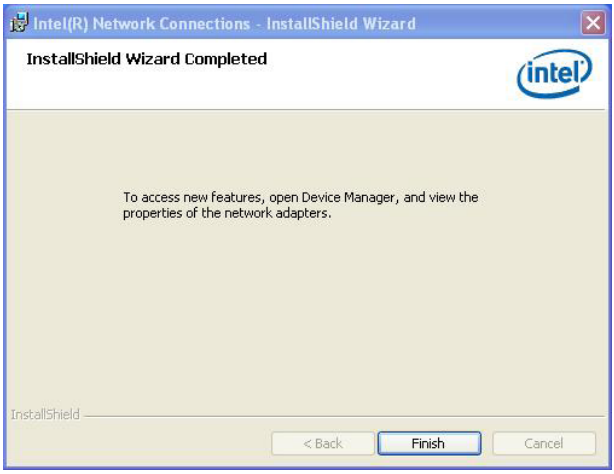
5. Click **Install** to proceed.


Intel(R) Network Connections - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

The driver installation then starts and progresses.


Intel(R) Network Connections - InstallShield Wizard
Installing Intel(R) Network Connections
The program features you selected are being installed.
Please wait while the InstallShield Wizard installs Intel(R) Network Connections. This may take several minutes.
Status:
Compiling MOFs
InstallShield
< Back
Next >
Cancel

6. Once the driver installation is through, click **Finish** to finish and quit the installation.



4.2.5. TOUCH

1. Run the executable file “Setup.exe” at the suggested path (\Touch\Pen-Mount Windows XP Embedded Universal Driver V2.1.0.238\repository) as described in 4.1. Before Installation on page 42.

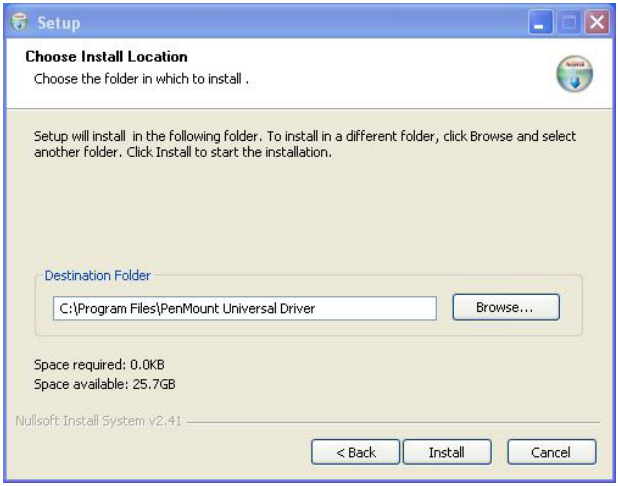
   The installation wizard then opens. Click **Next** to proceed.

Setup
Welcome to the Setup Wizard
This wizard will guide you through the installation of .
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
< Back
Next >
Cancel

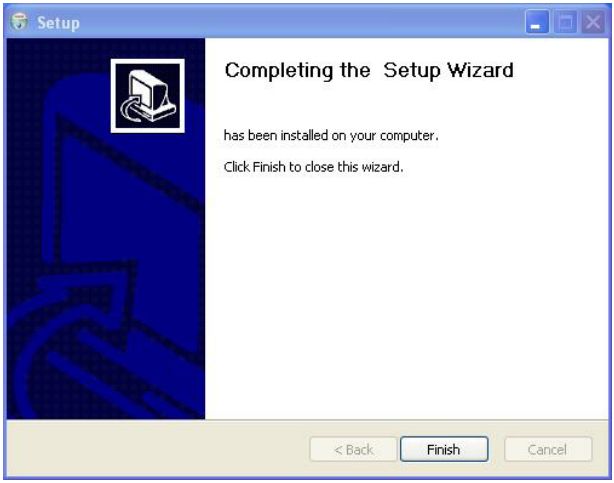
2. Read the license agreement and click **I Agree** to proceed.

Setup
License Agreement
Please review the license terms before installing .
Press Page Down to see the rest of the agreement.
PLEASE READ THE LICENSE AGREEMENT
PenMount touch screen driver software is only for using with PenMount touch screen controller or control board.
Any person or company using a PenMount driver on any piece of equipment which does not utilize an PenMount touch screen controller will be prosecuted to the full extent of the law.
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install .
Nullsoft Install System v2.41
< Back
I Agree
Cancel

3. Select where to install the driver. Then click **Install** to proceed.


Setup
Choose Install Location
Choose the folder in which to install .
Setup will install in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files\PenMount Universal Driver
Browse...
Space required: 0.0KB
Space available: 25.7GB
Nullsoft Install System v2.41
< Back
Install
Cancel

4. Once the installation is through, click **Finish** to finish and quit the installation.

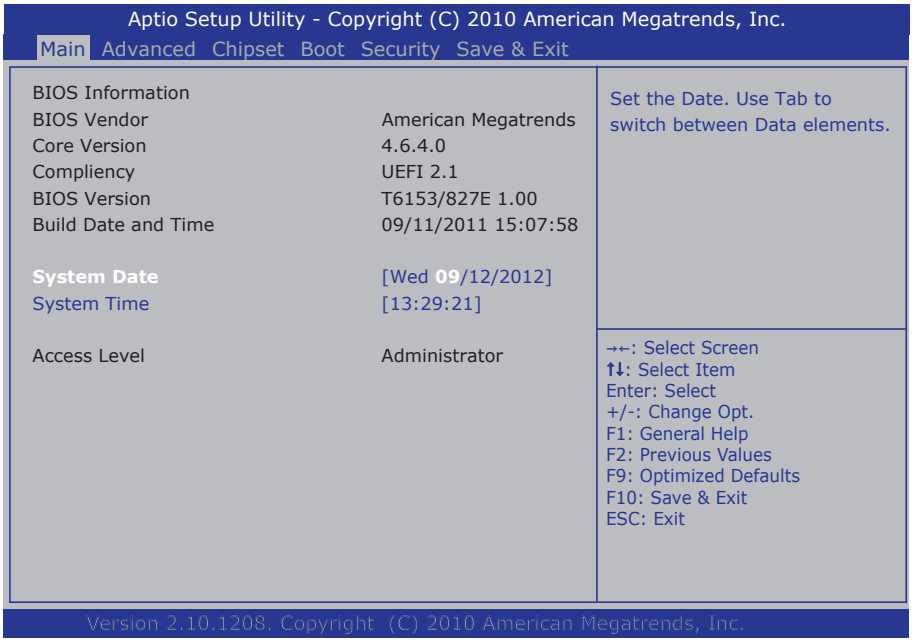


Chapter 5

BIOS

The BIOS SETUP utility for Tokin-Series is featured by American Megatrends Inc to configure the system settings stored in the system's BIOS ROM. The BIOS is activated once the IPPC powers on. When the IPPC is off, the battery on the main board supplies power to BIOS RAM.

To enter the BIOS SETUP utility, press-and-hold the "**Delete**" key upon powering on the IPPC.



The featured settings are:

Menu	Description
Main	See 5.1. Main on page 62.
Advanced	See 5.2. Advanced on page 64.
Chipset	See 5.3. Chipset on page 68.
Boot	See 5.4. Boot on page 75.
Security	See 5.5. Security on page 76.
Save & Exit	See 5.6. Save & Exit on page 77.

Key Commands

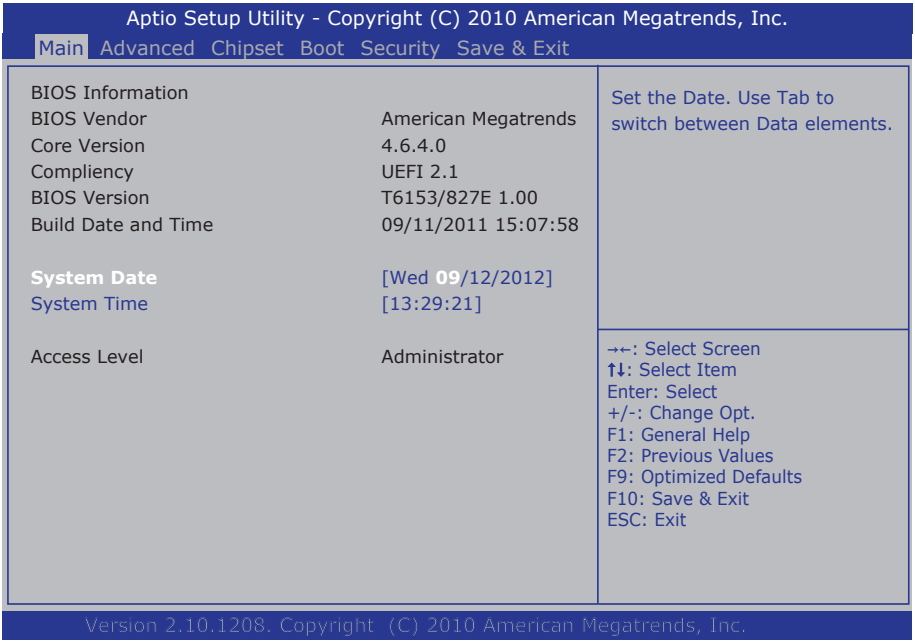
The BIOS SETUP utility relies on a keyboard to receive user's instructions. Hit the following keys to navigate within the utility and use it.

Keystroke	Function
← →	Moves left/right between the top menus.
↓ ↑	Moves up/down between highlight items.
Enter	Selects an highlighted item/field.
Esc	► On the top menus Use **Esc** to quit the utility without saving changes to CMOS. (The screen will prompt a message asking you to select **OK** or **Cancel** for exiting discarding changes. ► On the submenus Use **Esc** to quit current screen and return to the top menu.
Page Up / +	Increases current value to the next higher value or switches between available options.
Page Down / -	Decreases current value to the next lower value or switches between available options.
F1	Opens the **Help** of the BIOS SETUP utility.
F10	Exits the utility saving the changes that have been made. (The screen then prompts a message asking you to select **OK** or **Cancel** to exit saving changes.)

Note: *Pay attention to the "WARNING" that shows at the left frame when making any change to the BIOS settings.*

5.1. Main

The **Main** menu features **System Date** and **System Time** settings while displaying some BIOS info.



The BIOS info displayed are:

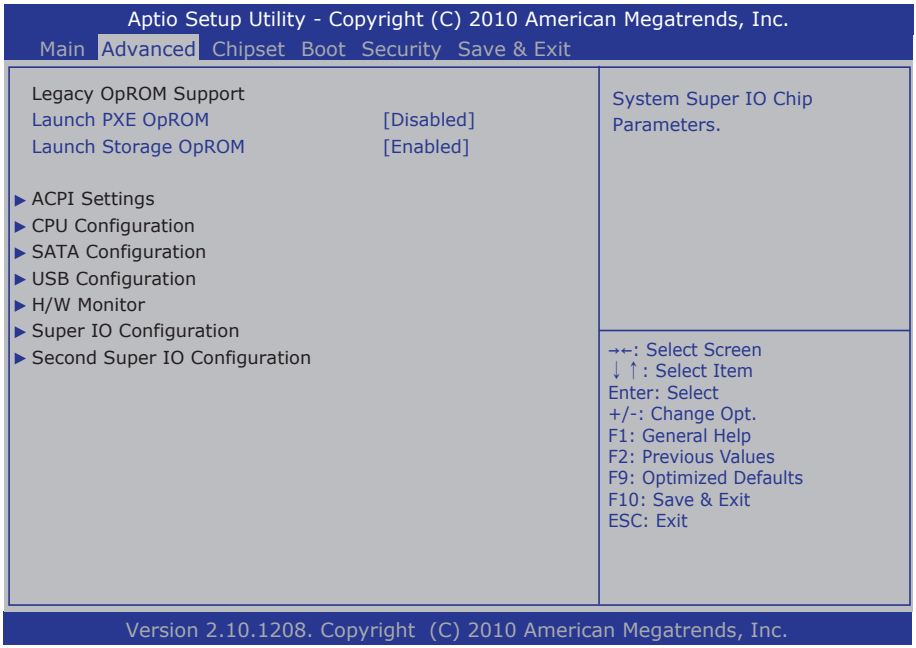
Item	Description
BIOS Vendor	Delivers the provider of the BIOS Setup utility.
Core Version	Delivers the version info of the core.
Compliency	Delivers UEFI support.
BIOS Version	Delivers BIOS version info.
Build Date and Time	Delivers the date and time the BIOS Setup utility was made/updated.

The featured settings are:

Setting	Description
System Time	Sets system time. ► The time format is: **Hour:** 00 to 23 **Minute:** 00 to 59 **Second:** 00 to 59
System Date	Sets system date. ► The date format is: **Day:** Sun to Sat **Month:** 1 to 12 **Date:** 1 to 31 **Year:** 1999 to 2099

5.2. Advanced

The **Advanced** menu configures the system's Super IO chip.


Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Legacy OpROM Support
Launch PXE OpROM [Disabled]
Launch Storage OpROM [Enabled]
▶ ACPI Settings
▶ CPU Configuration
▶ SATA Configuration
▶ USB Configuration
▶ H/W Monitor
▶ Super IO Configuration
▶ Second Super IO Configuration
System Super IO Chip Parameters.
→←: Select Screen
↓ ↑: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

The featured settings and submenus are:

Setting	Description
Launch PXE OpROM	Enables/disables the boot option for legacy network devices. ► **Disabled** is the default.
Launch Storage OpROM	Enables/disables the boot option for legacy mass storage devices with Option ROM. ► **Enabled** is the default.
ACPI Settings	See 5.2.1. ACPI Settings on page 65.
CPU Configuration	See 5.2.2. CPU Configuration on page 65.
SATA Configuration	See 5.2.3. SATA Configuration on page 66.

USB Configuration	See 5.2.4. USB Configuration on page 66.
H/W Monitor	See 5.2.5. H/W Monitor on page 67.
Super IO Configuration	See 5.2.6. Super IO Configuration on page 67.
Second Super IO Configuration	See 5.2.7. Second Super IO Configuration on page 67.

5.2.1. ACPI Settings

ACPI Settings configure the system's ACPI. The featured settings are:

Setting	Description
Enable Hibernation	Enables/disables the system to/from hibernation (OS/S4 Sleep State). ► **Enabled** is the default. ► This option may not be effective with some OS.
ACPI Sleep State	Sets the highest ACPI sleep state that system enters when the suspend bu.tton is hit. ► Options available are **S1 (CPU Stop Clock)** and **Suspend Diabled.** ► **S1 (CPU Stop Clock)** is the default.
Power-Supply Type	Sets the power-supply type. ► Options available are **AT** (default) and **ATX**.

5.2.2. CPU Configuration

Select **CPU Configuration** to view the CPU parameters such as the model name, processor stepping, processor speed, microdoe revision, max. processor speed, min. processor speed, processor cores, Intel HT Technology and EMT64 support.

5.2.3. SATA Configuration

SATA Configuration delivers SATA device(s) information and provides users with the settings to control SATA device. Featured settings are:

Setting	Description
SATA Controller(s)	Enables/disables SATA device. ► **Enabled** is the default.
SATA Mode Selection	Sets how SATA controller(s) operate. ► Options available are **IDE** (default) and **AHCI**.

5.2.4. USB Configuration

USB Configuration displays the info of the connected USB devices and sets USB parameters. The featured setting is:

Setting	Description
Legacy USB Support	Enables/disables legacy USB support. ► Options available are **Enabled** (default), **Disabled** and **Auto**. ► Select **Auto** to disable legacy support if no USB device are connected. ► Select **Diabled** to keep USB devices available only for EFI applications.

5.2.5. H/W Monitor

H/W Monitor monitors the systems' hardware status. Select **H/W Monitor** to run a health report of the IPPC that includes the info of CPU temperature, system temperature, VCC, VCORE and so on.

5.2.6. Super IO Configuration

Super IO Configuration controls the system's Super IO chip. The featured setting is:

Setting	Description
Power On After Power Fail	Defines which state to go to when power is resumed after a power failure. ► Options available are **Power Off** (default) and **Power On**.

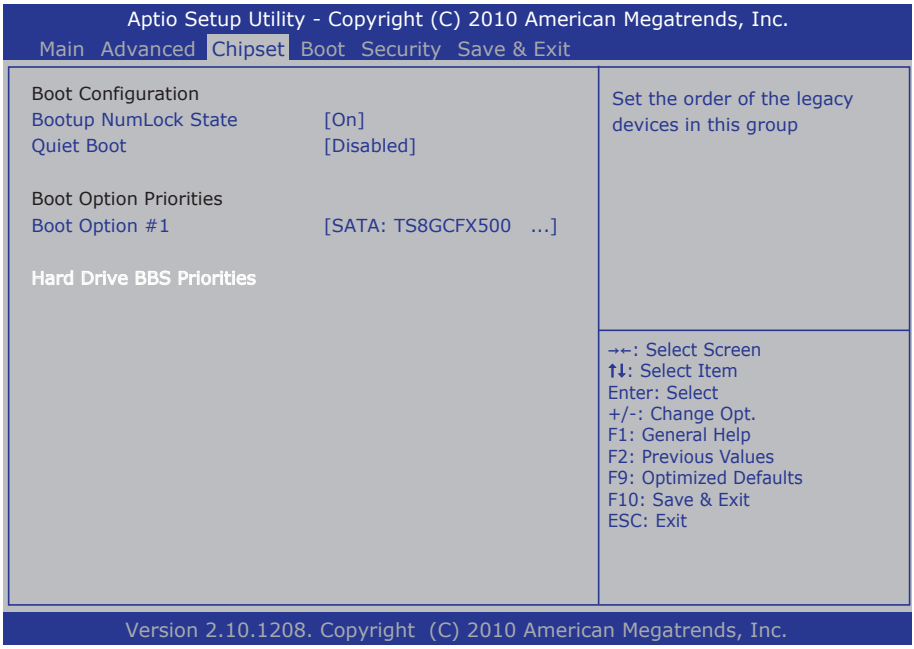
5.2.7. Second Super IO Configuration

Second Super IO Configuration sets the parameters for the serial port(s) available on the system. The featured settings are:

Setting	Description
Serial Port	Enables/disables the serial port (COM). ► **Enabled** is the default.
Change Settings	Sets the optimal IO address and IRQ info for the Super IO device. ► Options available are: **IO=3F8h; IRQ=4;** (default) **IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;** **IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;** **IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;** **IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;**

5.3. Chipset

The **Chipset** menu controls the system's chipset.


Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Boot Configuration
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [SATA: TS8GCFX500 ...]
Hard Drive BBS Priorities
Set the order of the legacy devices in this group
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

The featured submenu are **System Agent (SA) Configuration** and **PCH-IO Configuration**, which are covered in the following sections.

Submenu	Description
System Agent (SA) Configuration	See 5.3.1. System Agent (SA) Configuration on page 69.
PCH-IO Configuration	See 5.3.2. PCH-IO Configuration on page 74.

5.3.1. System Agent (SA) Configuration

This submenu shows and configures System Agent (SA) settings. The featured settings are:

Setting	Description
Graphic Configuration	See 5.3.1.1. Graphic Configuration on page 70.
DMI Configuration	See 5.3.1.2. DMI Configuration on page 73.
NB PCIe Configuration	See 5.3.1.3. NB PCIe Configuration on page 73.
Memory Configuration	See 5.3.1.4. Memory Configuration on page 74.

5.3.1.1. Graphic Configuration

Select **Graphic Configuration** to view graphics info and accesses graphic settings. The featured settings are:

Setting / Submenu	Description
Graphics Turbo IMON Current	Sets the graphic turbo IMON current values. ► Options avaiable are **14** to **31**. ► **31** is the default.
Primary Display	Sets which graphics device to use as the primary display or sets **SG** for switchable Gfx. ► Options available are **Auto** (default), **IGFX**, **PEG**, **PCI** and **SG**.
Internal Graphics	Enables/disables the internal graphic device. ► Options available are **Auto** (default), **Enabled** and **Disabled**.
LCD Control	Configures LCD settings. Options avaiable are:

Setting	Description
Primary IGF Boot Display	See Primary IGF Boot Display on page 71.
LCD Panel Type	See LCD Panel Type on page 71.
Panel Scaling	See Panel Scaling on page 71.
Backlight Control	See Backlight Control on page 71.
BIA	See BIA on page 72.
Spread Spectrum clock Chip	See Spread Spectrum clock Chip on page 72.
ALS Support	See ALS Support on page 72.
Active LFP	See Active LFP on page 72.
Panel Color Depth	See Panel Color Depth on page 73.

Primary IGF Boot Display

Sets the video device to activate during POST.

- Options available are **CRT**, **LVDS** and **CRT + LVDS** (default).
- This setting has no effect if an external graphics card is present.
- Secondary boot display selection will appear based on your selection.
- VGA modes are supported only on primary display.

LCD Panel Type

Sets the LCD panel types. Options available are:

VBIOS Default
800x600 LVDS
1024x768 LVDS (default)
1280x1024 LVDS
1400x1050 LVDS1
1400x1050 LVDS2
1600x1200 LVDS
1680x1050 LVDS
1920x1200 LVDS
1600x900 LVDS
1280x800 LVDS
1280x600 LVDS
2048x1536 LVDS
1366x768 LVDS

Panel Scaling

Sets the LCD panel scaling for the internal graphic. Options available are **Auto** (default), **Off** and **Force Scaling**.

Backlight Control

Configures LCD backlight. Options available are **PWM Inverted** (default), **PWM Normal**, **GMBus Inverted**, and **GMBus Normal**.

BIA

Enables/disables BIA control.

- Options available are **Auto** (default), **Disabled** and **Level 1~5**.
- Select **Auto** to have **GMCH** backlight control use VBT default.
- Select **Level 1~5** to enable BIA control with different aggressiveness.

Spread Spectrum clock Chip

Sets which hardware software to control the spread spectrum.

- Options available are **Off** (default), **Hardware** and **Software**.
- Select **Hardware** to control the spread spectrum by the chip.
- Select **Software** to control the spread spectrum by the BIOS.

ALS Support

Enables/disables ALS support.

- This setting is only efficacious for ACPI.
- For legacy, ALS is supprted through the internal graphic device INT10 function.
- For ACPI, ALS is supported through an ACPI ALS driver.

Active LFP

Configures LFP.

- Select **No LVDS** to have VBIOS disable LVDS.
- Select **Int-LVDS** to have BIOS enable LVDS driver by the integrated encoder. (Default.)
- Select **SDVO LVDS** to have VBIOS enable LVDS driver by SDVO encoder.
- Select **eDP Port-A** to drive LFP by the Int-DisplayPort encoder from Port-A.

Panel Color Depth

Sets the color depth for LFP panel.

► Options available are **18 Bit** and **24 Bit**.

5.3.1.2. DMI Configuration

Use this submenu to control various DMI features.

5.3.1.3. NB PCIe Configuration

Configures NB PCI Express. Featured settings are:

Setting	Description
PEG0 - Gen X	Configures PEG0 B0:D1:F0 Gen1-Gen2. ► Options avaiable are **Gen1** (default) and **Gen2**.
PEG1 - Gen X	Configures PEG1 B0:D1:F1 Gen1-Gen2. ► Options avaiable are **Gen1** (default) and **Gen2**.
PEG2 - Gen X	Configures PEG2 B0:D1:F2 Gen1-Gen2. ► Options avaiable are **Gen1** (default) and **Gen2**.
PEG3 - Gen X	Configures PEG3 B0:D1:F3 Gen1-Gen2. ► Options avaiable are **Gen1** (default) and **Gen2**.
Always Enable PEG	Enables/disables the PEG slot. ► **Enabled** is the default.
PEG ASPM	Sets ASPM support for the PEG device. ► This setting is inefficacious if PEG isn't active at the moment. ► Options available are: **Disabled**, **Auto** (default), **ASPM L0s**, **ASPM L1** and **ASPM L0sL1**.
De-emphasis Control	Configures the De-emphasis control on PEG. ► Options available are: **-6 dB** and **-3.5 dB** (default).

5.3.1.4. Memory Configuration

Select **Memory Configuration** to view the system's memory information that includes memory RC version, memory frequency, total memory, DIMM presence, CAS latency and minimum delay tiem.

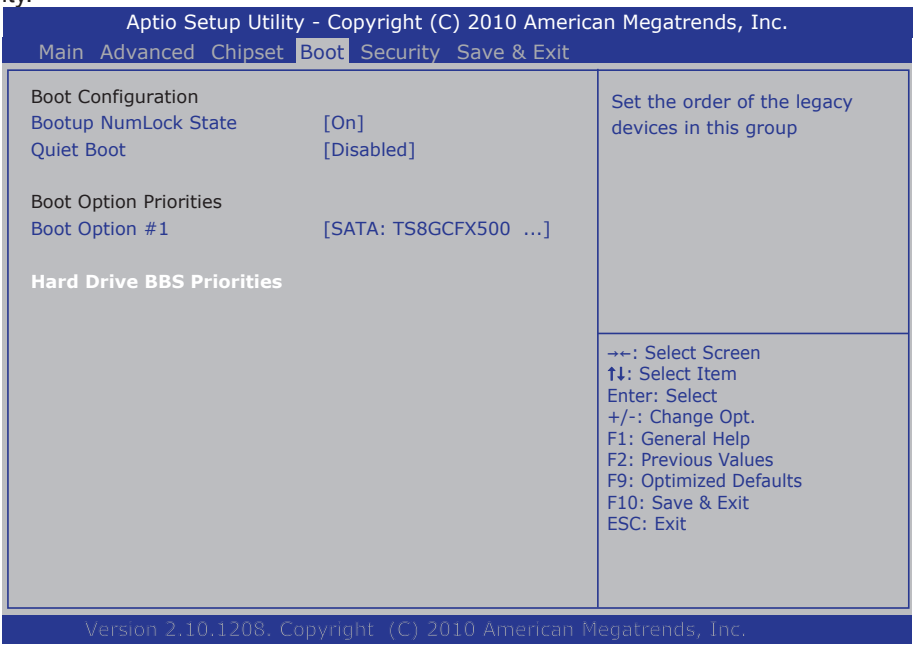
5.3.2. PCH-IO Configuration

PCH-IO Configuration sets PCH parameters. Featured settings are:

<table>
<tr><th>Setting / Submenu</th><th>Description</th></tr>
<tr><td>PCH LAN Controller</td><td>Enables/disables the onboard NIC (network interface controller).
► Enabled is the default.</td></tr>
<tr><td>Wake on LAN</td><td>Enables/disables the integrated LAN to wake the system.
► Enabled is the default.</td></tr>
<tr><td>PCIE Wake Up</td><td>Enables/disables PCIE Wake# to wake the system.
► Disabled is the default.</td></tr>
<tr><td>Azalia</td><td>Controls Azalia device.
► Select Disabled to unconditionally disable Azalia
► Select Enabled to unconditionally enable Azalia.
► Select Auto to enable Azalia if it is present and disable it if otherwise.</td></tr>
<tr><td>USB Configuration</td><td>Controls USB devices. Featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>EHCI1</td><td>Enables/disables the USB EHCI (USB2.0) functions.
► Enabled is the default.
► One EHCI controller must always be enabled.</td></tr>
<tr><td>EHCI2</td><td>Enables/disables the USB EHCI (USB2.0) functions.
► Enabled is the default.
► One EHCI controller must always be enabled.</td></tr>
</table>
</td></tr>
</table>

5.4. Boot

The **Boot** menu configures how to boot up the system such as boot device priority.

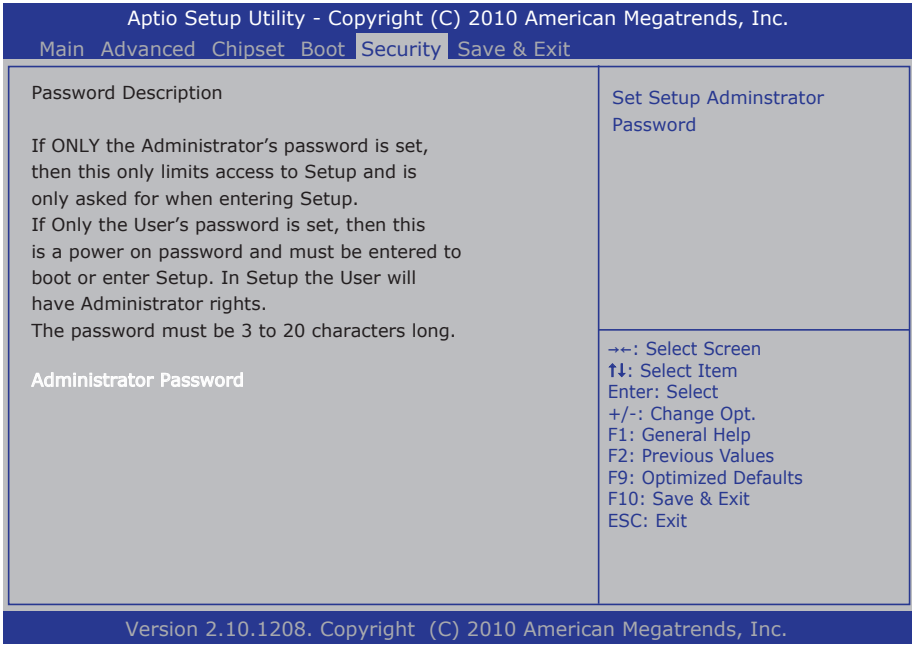

Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Boot Configuration
Bootup NumLock State [On]
Quiet Boot [Disabled]
Boot Option Priorities
Boot Option #1 [SATA: TS8GCFX500 ...]
Hard Drive BBS Priorities
Set the order of the legacy devices in this group
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

The featured settings are:

Setting	Description
Bootup NumLock State	Sets keyboard's NumLock state when the system boots up. ► Options available are **On** (default) and **Off**.
Quiet Boot	Enables/disables Quite Boot. ► **Disabled** is the default.
Boot Option #1	Sets the very 1st boot devices. ► Options avaiable are the built-in **SATA: TS-8GCFX500** (default) and **Disabled**.
Hard Drive BBS Priority	Sets hard drive boot priority. ► Options available are the built-in hard drive (the default) and **Disabled**.

5.5. Security

The **Security** menu sets up the administrator password. Once an administrator password is set up, this BIOS SETUP utlity is limited to access and will ask for the password each time any access is attempted.

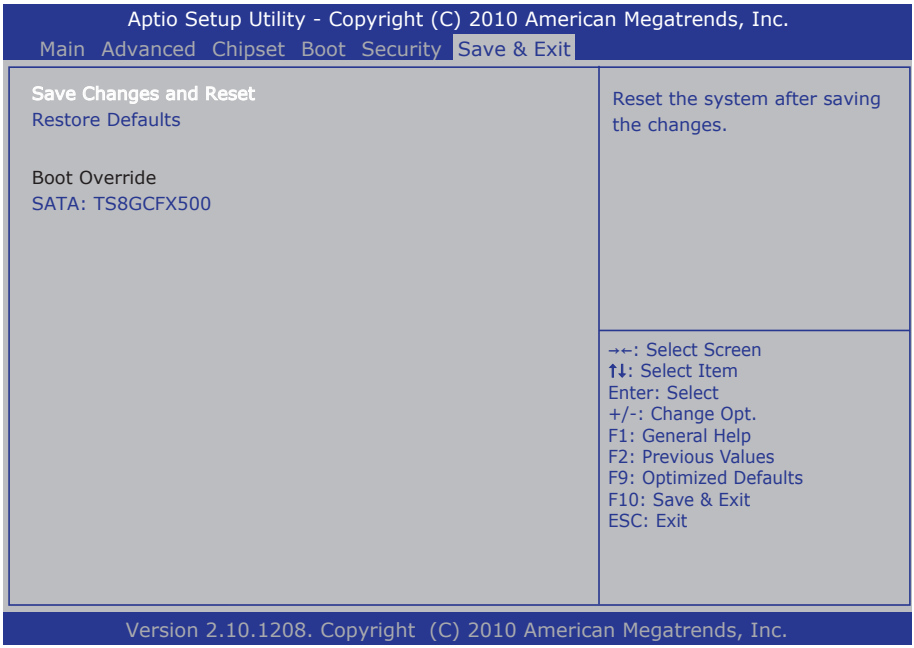

Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If Only the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password must be 3 to 20 characters long.
Administrator Password
Set Setup Adminstrator Password
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

The featured settings is:

Setting	Description
Administrator Password	To set up an administrator password: 1. Select **Administrator Password**. The screen then pops up an **Creatg New Password** dialog. 2. Enter your desired password that is no less than 3 charachers and no more than 20 characters. 3. Hit [Enter] key to submit.

5.6. Save & Exit

The **Save & Exit** menu configures how to quit the BIOS SETUP utility.


Aptio Setup Utility - Copyright (C) 2010 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Reset
Restore Defaults
Boot Override
SATA: TS8GCFX500
Reset the system after saving the changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.10.1208. Copyright (C) 2010 American Megatrends, Inc.

Features settings are:

Setting	Description
Save Changes and Reset	Sets whether to resets the system after saving the changes.
Restore Defaults	Sets whether to restore factory defaults.
Boot Override	**Boot Override** presents a list of boot devices on-screen. Select the device to boot up the system regardless of the currently configured boot priority.

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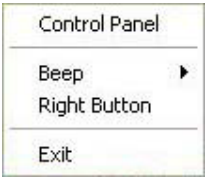
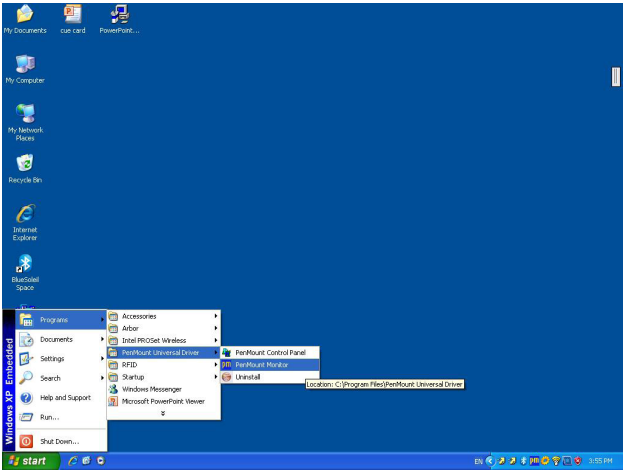
Appendix

Touch Panel

1.1. PenMount Monitor

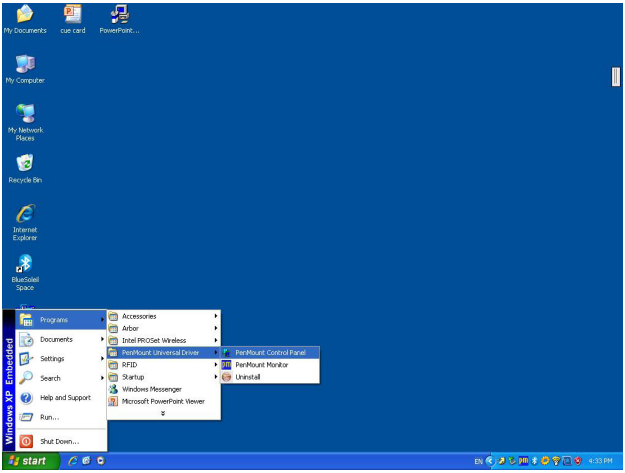
The PenMount Monitor icon (pm) will appear in the system tray at the bottom-right corner after you turn on ***PenMount Monitor*** from ***Programs/ PenMount Universal Driver/PenMount Monitor.*** Right-click the pm icon in system tray and display its submenu.





PenMount Monitor has the following functions:

Control Panel	Launch the **PenMount Control Panel** utility. You may also launch it from ***Programs***.
Beep	Set the Beep function for each device.
Right Button	After ticking this item, a mouse icon appears on the right side of your screen.
Exit	Exits the PenMount Monitor function.

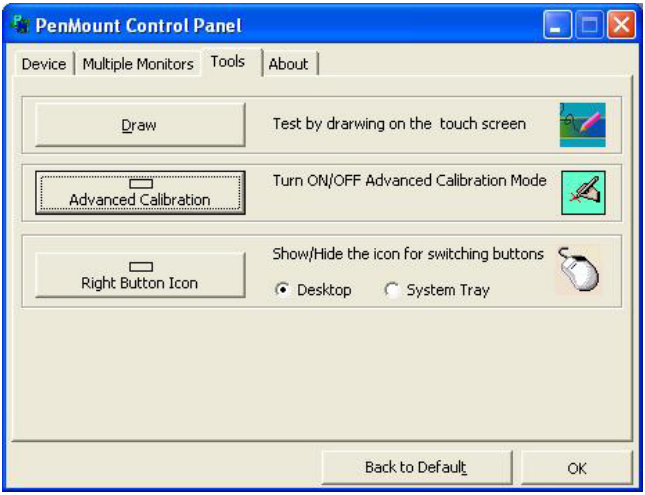


1.2. PenMount Control Panel

After you have selected the ***Control Panel*** item on the pop-up menu or open it up from ***Programs*** (as shown on previous page), the PenMount Control Panel utility UI appears as below. The functions of the **PenMount Control Panel** such as Device, Calibrate, Setting, Multiple Monitors, Tools and About are explained in the following sections.

The Tools Tab

When you click the PenMount icon in the system tray and select "Control Panel" from the menu, "PenMount Control Panel" will appear. Among the four tabs - Device, Multiple Monitors, **Tools** and About - the function of Tools should be described first as follows:



Draw

Tests or demonstrates the PenMount touch screen operation.

Advanced Calibration

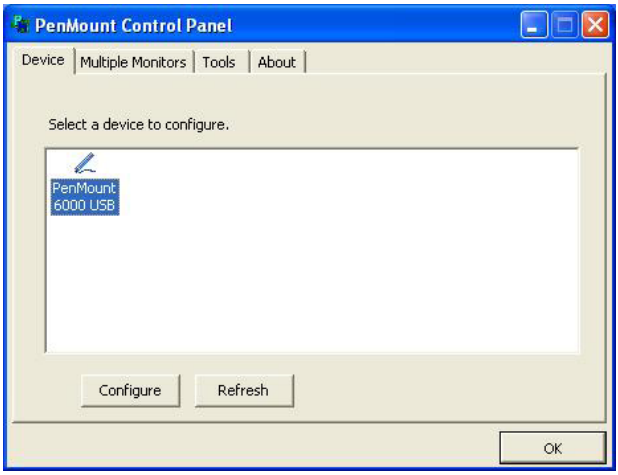
Enable Advanced Calibration function.

Right Button Icon

Enable right button function. The icon can be shown on Desktop or in the system tray at the bottom-right corner.

The Device Tab

In this window, you can find out how many devices are detected on your system. On the **Device** tab, select the device icon and tap **Configure,** or double tap the device icon for touch screen calibration.



And then another window with the **Calibrate** tab appears.

Device Calibration Dialog

The Calibrate Tab

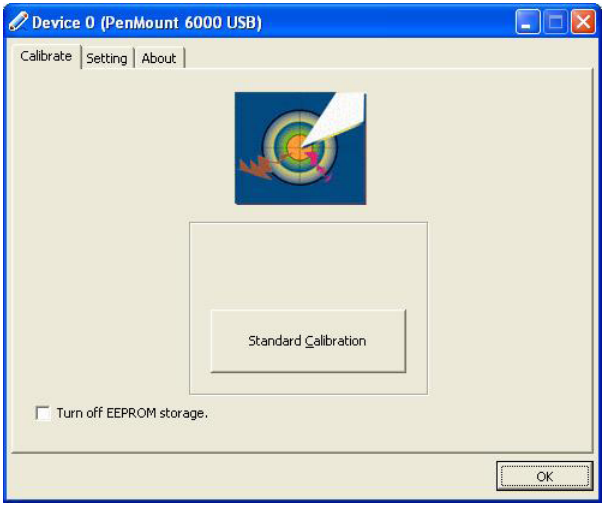
This function offers two ways to calibrate your touch screen. '**Standard Calibration**' adjusts most touch screens while '**Advanced Calibration**' adjusts aging touch screens.

Standard Calibration

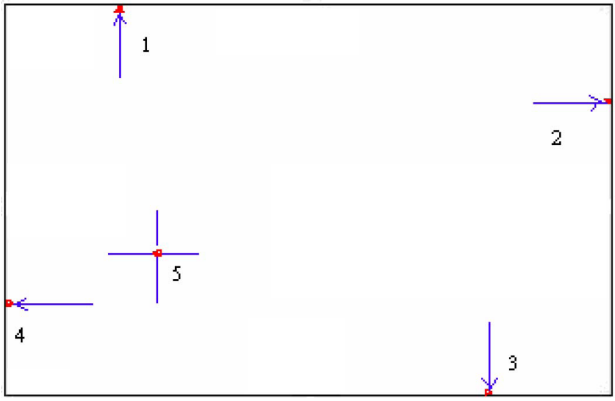
The Standard Calibration function lets you match the touch screen to your display so that the point you touch is accurately tracked on screen. Standard Calibration only requires four points for calibration and one point for confirmation. Under normal circumstance Standard Calibration is all you need to perform an accurate calibration.

By default, only the Standard Calibration button is available.

1. Please tap the Standard Calibration button to start calibration procedures.



2. After tapping the button, the arrow appears pointing to a red square. Use your finger or stylus to touch the red square and hold down until the screen shows the message - "Lift off to proceed".
3. And then the next arrow appears. After the fifth red point calibration is complete, the program will jump out automatically, or you may press ESC key to quit it manually.

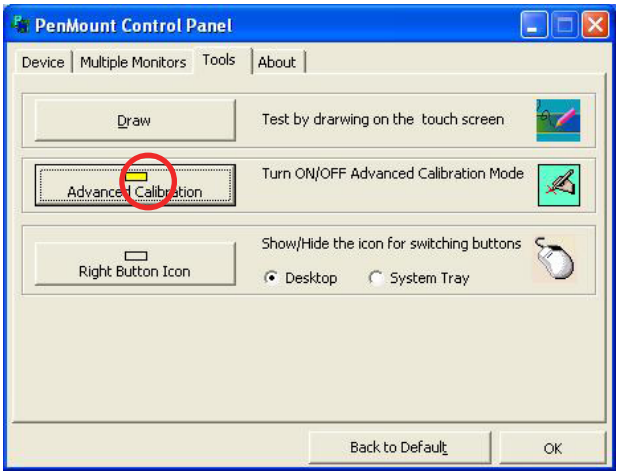


Note: The older the touch screen gets, the more Advanced Mode calibration points you need for an accurate calibration. Use a stylus during Advanced Calibration for better accuracy. Please follow the step as below:

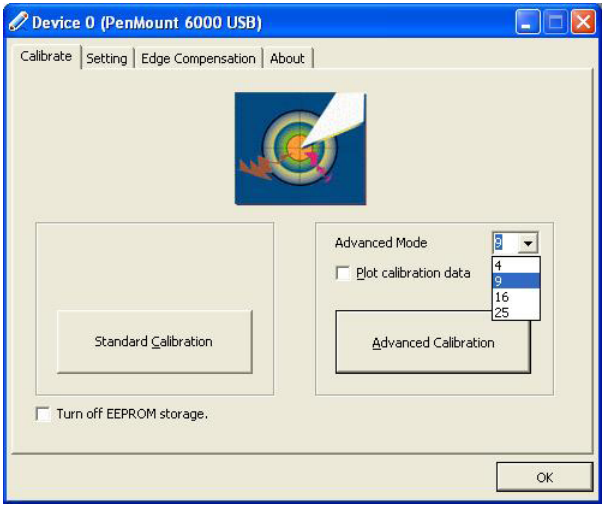
Advanced Calibration

The Advanced Calibration function improves the accuracy of calibration by using more involved engineering calculations. Use this function only if you have tried the Standard Calibration and there is still a discrepancy in the way the touch screen maps to the display. You can choose 4, 9, 16 or 25 points to calibrate, though we suggest that you first try 9 points, if it is still not tracking well then try 16 or 25 points. The more points you use for calibration, the greater the accuracy is. Errors in calibration may occur due to viewing angle, or individual skill, and there may be little difference in using 16 or 25 points. Note that a stylus is recommended for most accurate results.

1. Come back to PenMount Control Panel and select the **Tools** tab. Tap the Advanced Calibration button to enable it (when enabled, the small rectangle in the middle appears in yellow).

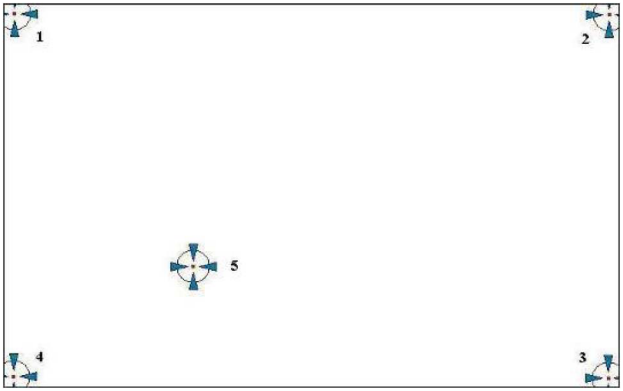


2. Select **Device** to calibrate, and then you can start to do "Advanced Calibration". Tap the arrow to pull down the drop-down menu and select the number determining how many points will be used for calibration.



Note: You are recommended to use a stylus during Advanced Calibration for greater accuracy.

3. After tapping the button, a crosshair will appear on screen. Use your finger or stylus to touch the red spot inside it and hold down until the screen shows this message - “Lift off to proceed” and then the next crosshair will appear. After all crosshairs are clicked, the program will jump out automatically, or you may press ESC key to quit it manually.



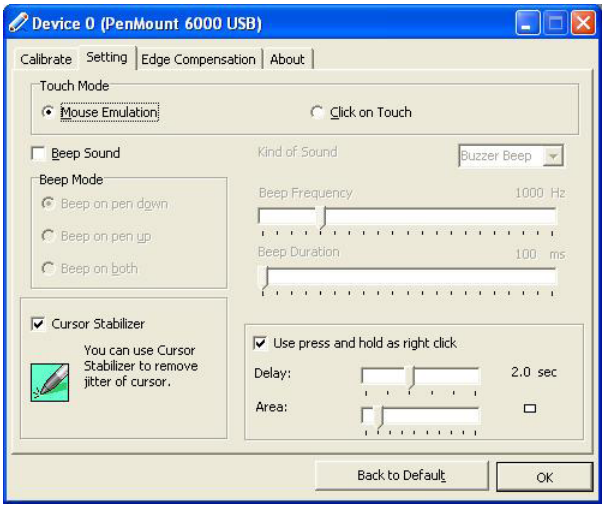
Plot Calibration Data

Check this function to have touch panel linearity comparison graph appear when you finish Advanced Calibration. The black lines reflect the ideal linearity assumed by PenMount's application program while the blue lines show the approximate linearity calculated by PenMount's application program as the result of user's execution of Advance Calibration.

Turn off EEPROM storage

Tick this function to disable the write-in of calibration data in Controller.

The Setting Tab

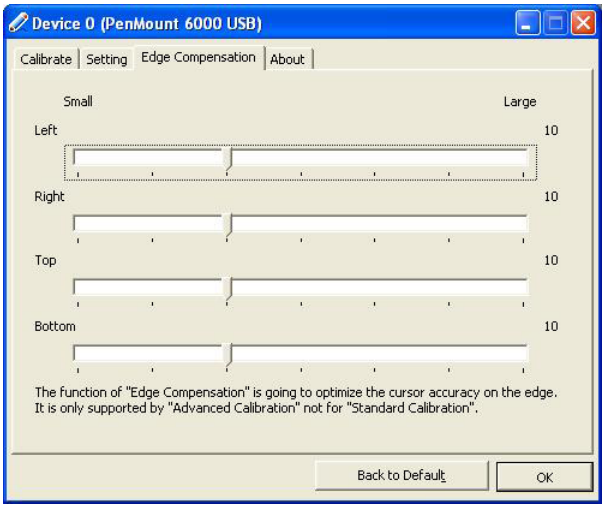


Touch Mode	This mode enables and disables the mouse's ability to drag on-screen icons.
Mouse Emulation	Select this mode and the mouse functions as normal and allows dragging of icons.
Click on Touch	Select this mode and the mouse only provides a click function, and dragging is disabled.

Beep Sound	Turn On/Off Beep Sound.
Beep on Pen Down	Beep occurs when pen is down.
Beep on Pen Up	Beep occurs when pen is up.
Beep on Both	Beep occurs when pen is down or up.
Beep Frequency	Modifies sound frequency.
Beep Duration	Modifies sound duration.
Cursor Stabilizer	Enable the function supporting to prevent cursor shake.
Use press and hold as right click	You can set the time out and area as you need.

The Edge Compensation Tab

This tab is the edge compensation settings for the advanced calibration. You can adjust the settings from 0 to 30 for accommodating the difference of each touch panel.



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